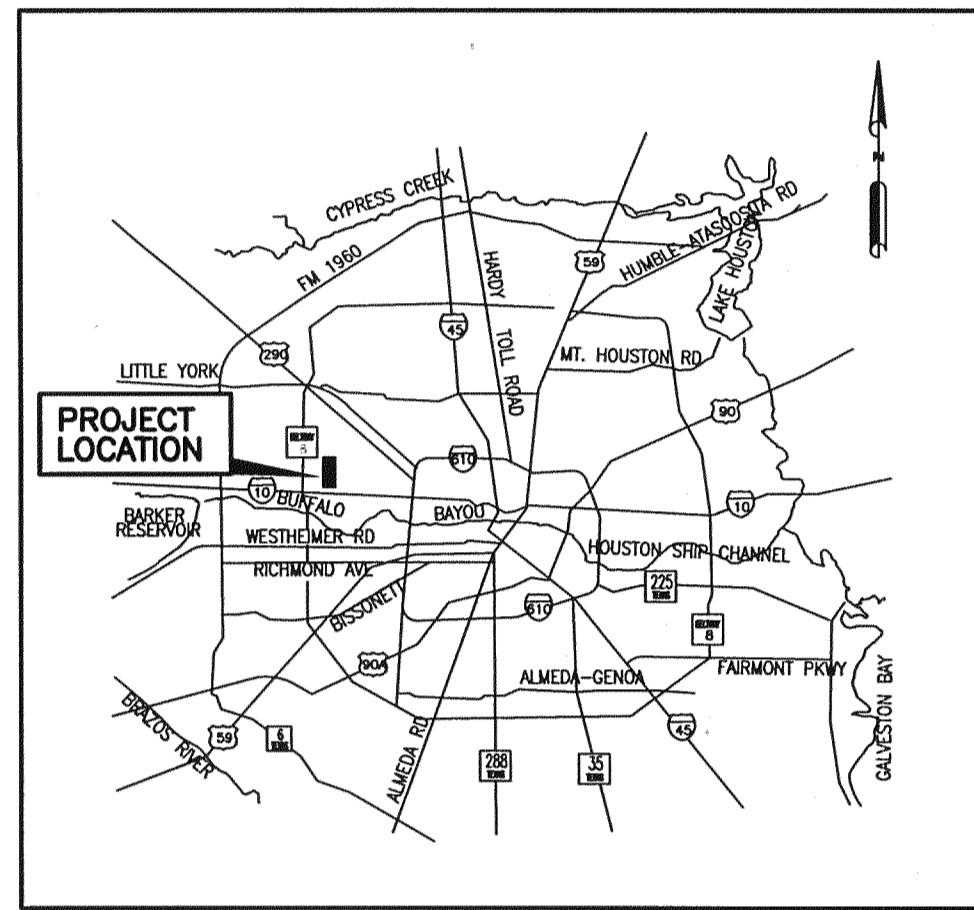


# MEMORIAL CITY REDEVELOPMENT AUTHORITY

## LUMPKIN ROAD ROADWAY RECONSTRUCTION AND DRAINAGE IMPROVEMENTS APPROXIMATELY 3,500 L.F. OF STORM SEWER AND ROADWAY RECONSTRUCTION FROM IH-10 TO NORTHBROOK DRIVE

WBS NO. N-T17000-0012-3



VICINITY MAP  
COUNCIL DISTRICT A  
NTS



PROJECT LOCATION MAP  
KEY MAP 489D & 449Z  
GIMS 4958a  
NTS

TDLR: EABPRJ4813697

On Behalf of  
TAX INCREMENT REINVESTMENT ZONE No. 17

SEPTEMBER 2014

100% SUBMITTAL

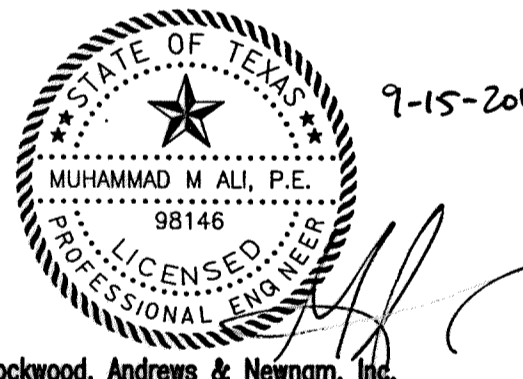
NOTIFY CITY OF HOUSTON 48 HOURS BEFORE STARTING CONSTRUCTION

SURVEYED BY: KUO & ASSOCIATES FB NO.: P-5857		Lockwood, Andrews & Newnam, Inc. Firm No. F-2614	
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES			
<b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING			
WATER _____ WASTEWATER _____ STORM WATER _____ STREET & BRIDGE _____	TRAFFIC AND TRANSPORTATION _____ STORM WATER QUALITY _____ FACILITIES _____ PARK-FORESTRY DEPT _____	CITY ENGINEER _____ DATE _____	DIRECTOR OF PUBLIC WORKS AND ENGINEERING _____ DATE _____
SHEET NO 1 OF 226			

# INDEX OF SHEETS

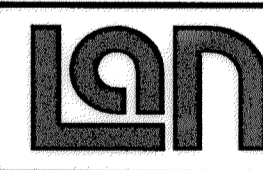
	<u>GENERAL</u>	<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	COVER SHEET AND VICINITY MAP	131	TYPICAL TRAFFIC CONTROL TYPICAL RIGHT LANE CLOSURE OF A MULTILANE STREET
2	INDEX OF SHEETS	132	TRAFFIC CONTROL PLAN TYPICAL PEDESTRIAN DETAILS
3 - 4	GENERAL CONSTRUCTION NOTES		
5	PRIVATE UTILITY NOTES		
6	SYMBOLS AND ABBREVIATIONS		
7	KEYED NOTES		
	<u>SURVEY CONTROL MAPS</u>		
8 - 10	LUMPKIN ROAD SURVEY CONTROL MAP & SWING TIES		
	<u>HORIZONTAL ALIGNMENT DATA</u>		
11	HORIZONTAL ALIGNMENT DATA		
	<u>DRAINAGE SHEETS</u>		
12	EXISTING OVERALL DRAINAGE AREA MAP		
13 - 16	EXISTING DRAINAGE AREA MAPS		
17	PROPOSED OVERALL DRAINAGE AREA MAP		
18 - 21	PROPOSED DRAINAGE AREA MAPS		
22 - 28	2-YEAR EXISTING HOUSTORM OUTPUT		
29 - 33	2-YEAR PROPOSED HOUSTORM OUTPUT		
34	100-YEAR DRAINAGE CALCULATIONS		
35 - 36	WESTVIEW BASIN LAYOUT AND GRADING		
37 - 38	WESTVIEW BASIN CROSS SECTIONS		
39	WESTVIEW BASIN PAVEMENT LAYOUT		
40 - 42	WESTVIEW BASIN GRAVITY WALL LAYOUT		
43	WESTVIEW BASIN DETAILS		
44	CONCRETE CHANNEL LINING DETAILS (HCFCD)		
45	INTERCEPTOR STRUCTURE DETAILS (HCFCD)		
46	JUNCTION BOX GENERAL NOTES AND DETAILS (S1)		
47	JUNCTION BOX PLAN, SECTION, AND SCHEDULE (S2)		
48 - 51	STANDARD DRAINAGE DETAILS		
52	CURB INLET TYPE C (HIL-C) (TXDOT)		
53	BOX CULVERTS PRECAST MISCELLANEOUS DETAILS (SCP-MD) (TXDOT)		
54	MISCELLANEOUS SEWER DETAILS (MSD) (TXDOT)		
55	CULVERT END CAP (CEC) (FW) (TXDOT)		
56	CONCRETE WINGWALLS (PW) (TXDOT)		
57	GATE DETAILS		
	<u>TYPICAL SECTIONS</u>		
58	EXISTING TYPICAL SECTIONS		
59 - 61	PROPOSED TYPICAL SECTIONS		
	<u>PAVEMENT SHEETS</u>		
62 - 63	SHEET LAYOUT		
64 - 81	PLAN & PROFILE PAVEMENT & STM SWR IMPROVEMENTS		
82	DRIVEWAY TABULATION DETAIL		
83 - 94	STORM SEWER LATERALS		
	<u>WATER &amp; SANITARY SEWER SHEETS</u>		
95 - 112	PLAN & PROFILE WATER & SAN SWR IMPROVEMENTS		
113 - 115	WATER & SANITARY SEWER CROSSINGS		
	<u>TRAFFIC CONTROL PLANS &amp; STANDARDS</u>		
116	TRAFFIC CONTROL PLAN GENERAL NOTES		
117	TRAFFIC CONTROL PLAN - OVERALL PHASING LAYOUT		
118	TRAFFIC CONTROL PLAN - PHASE 1		
119	SOUTHBOUND DETOUR PLAN - PHASE 1 AND PHASE 3-STEP 3		
120	TRAFFIC CONTROL PLAN - PHASE 2		
121	NORTHBOUND DETOUR PLAN PHASE 2 AND PHASE 3-STEP 3		
122	TRAFFIC CONTROL PLAN PHASE 3 STEP 1		
123	TRAFFIC CONTROL PLAN PHASE 3 STEP 2		
124	TRAFFIC CONTROL PLAN PHASE 3 STEP 3		
125	TRAFFIC CONTROL PLAN PHASE 3 STEP 4		
126	TRAFFIC CONTROL PLAN PHASE 4 STEP 1		
127	TRAFFIC CONTROL PLAN PHASE 4 STEP 2		
128	TRAFFIC CONTROL PLAN PHASE 5 - STEP 1		
129	TRAFFIC CONTROL PLAN PHASE 5 - STEP 2		
130	TYPICAL TRAFFIC CONTROL TYPICAL LEFT LANE CLOSURE OF A MULTILANE STREET		
			<u>TRAFFIC SIGNAL</u>
		133	TRAFFIC SIGNAL DESIGN - GENERAL
		134	EXISTING TRAFFIC SIGNAL LAYOUT AT WESTVIEW DRIVE
		135 - 137	TRAFFIC SIGNAL LAYOUT AT WESTVIEW DRIVE
		138	TEMPORARY TRAFFIC SIGNAL LAYOUT AT WESTVIEW DRIVE
			<u>SIGNING &amp; PAVEMENT MARKING</u>
		139 - 140	SUMMARY OF SIGNS
		141 - 143	SIGNING & PAVEMENT MARKING - BEGIN TO END PROJECT
		144 - 146	SITE PARKING LAYOUT
		147 - 152	SIGNING & PAVEMENT MARKING DETAILS
			<u>STORM WATER POLLUTION PREVENTION PLAN</u>
		153 - 156	STORM WATER POLLUTION PREVENTION PLAN
		157	STORM WATER POLLUTION PREVENTION PLAN DETAILS
			<u>TREE PROTECTION PLAN</u>
		158 - 160	TREE PROTECTION PLAN
			<u>LIGHTING</u>
		161 - 164	PROPOSED LIGHTING PLAN
			<u>ROADWAY CROSS SECTIONS</u>
		165 - 169	ROADWAY CROSS SECTIONS
		170	TOE WALL DETAIL
			<u>PROJECT LANDSCAPE/HARDSCAPE DETAILS</u>
		171	LANDSCAPE NOTES AND LEGEND
		172 - 174	LAYOUT AND MATERIAL PLAN
		175	ENLARGEMENT PLAN LAYOUT & MATERIALS
		176	ENLARGEMENT PLAN GRADING & DRAINAGE
		177 - 178	HARDSCAPE DETAILS
		179 - 180	SITE AMENITY DETAILS
		181	SITE FURNISHING DETAILS
		182	SITE LIGHTING DETAILS
		183 - 188	IRRIGATION PLAN
		189 - 192	PLANTING PLAN
		193 - 194	PLANTING DETAILS
		195 - 197	ELECTRICAL LIGHTING PLAN
		198	ELECTRICAL DETAILS
		199	ELECTRICAL ONE-LINE DIAGRAM & PANEL SCHEDULE
		200	ELECTRICAL SPECIFICATIONS
		201	SHELTER FOUNDATION FRAMING PLAN AND DETAILS
			<u>STANDARDS DETAILS</u>
		202 - 204	PAVEMENT DETAILS
		205	EXCAVATION, BEDDING, AND BACKFILL DETAILS
		206	PAVEMENT REPAIR DETAILS
		207	STREET CUT DETAILS
		208 - 209	CONCRETE SIDEWALK AND DRIVEWAY DETAILS
		210 - 211	WHEELCHAIR RAMP DETAILS
		212 - 213	STANDARD WATER LINE DETAILS
		214	AIR VALVE ASSEMBLY DETAILS
		215	LARGE DIA METER STD CONNECTION DETAILS
		216	LARGE DIAMETER WATERLINE EXCAVATION, BEDDING, AND BACKFILL DETAILS
		217 - 218	STANDARD SANITARY SEWER DETAILS
		219 - 225	TxDOT STANDARD DETAILS
		226	PROJECT SIGN

THIS PROJECT CONTAINS A TOTAL OF 226 DRAWINGS



Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

MEMORIAL CITY  
REDEVELOPMENT AUTHORITY


**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
  
INDEX OF SHEETS

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG. NO.
NOT TO SCALE		
SHEET:		
2 OF 226		

p:\proj\proj\10384-001\4-01-Drawings\General\2-001-Index Sht-RG.dgn 9/15/2014 2:07:47 PM

REVISIONS	
No.	DATE

**GENERAL CONSTRUCTION NOTES:**

1. CONSTRUCT WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING IN ACCORDANCE WITH THE LATEST EDITION OF THE PUBLICATIONS "STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING" AND "STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING" PUBLISHED BY THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
2. THE GEOTECHNICAL INVESTIGATION FOR THIS PROJECT WAS CONDUCTED IN ACCORDANCE WITH CHAPTER 11 OF THE LATEST EDITION OF THE PUBLICATION "INFRASTRUCTURE DESIGN MANUAL", PUBLISHED BY THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING. SOILS REPORT WAS PREPARED BY AVILES ENGINEERING CORPORATION, REPORT NO. G153-10 FINAL, DATED FEBRUARY 2013, AND REPORT NO. G153-17 FINAL, DATED JUNE 2014.
3. UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 713-223-4567/811 OR 800-344-8377 AND LONE STAR NOTIFICATION CENTER AT 800-669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION. UTILITIES MARKED WITHIN THE PUBLIC RIGHT OF WAY OR IN EASEMENTS SHALL COMPLY WITH TAC TITLE 16, PART 1, CHAPTER 18, RULE 18.6 AND THE AMERICAN PUBLIC WORKS ADMINISTRATION (APWA) UNIFORM COLOR CODE.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER, STORM WATER LINES, AND TRAFFIC CONTROL DEVICES. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING'S "STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEM, WATER LINES, STORM DRAINAGE, AND STREET PAVING" AND "STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING" REFERENCED ABOVE, AT NO ADDITIONAL COST.
5. CONTRACTOR SHALL NOTIFY THE OFFICE OF THE CITY ENGINEER, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING AT 832-394-9098 OR VIA FAX AT 832-395-4424 FOR INSPECTION AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
6. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIME DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER. ALL CONSTRUCTION STORM RUNOFF SHALL COMPLY WITH THE FINAL DRAFT OF STORMWATER MANAGEMENT HANDBOOK FOR CONSTRUCTION ACTIVITIES AS PREPARED BY HARRIS COUNTY/HCFCD, AND THE CITY OF HOUSTON, ALL IN COMPLIANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS.
7. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS, AND TREES ALONG THE AREA OF EXCAVATION.
8. CONTRACTOR SHALL MAINTAIN A SET OF REDLINE DRAWINGS RECORDING AS-BUILT CONDITIONS DURING CONSTRUCTION. THESE REDLINE MARKED UP DRAWINGS WILL BE SUBMITTED TO THE DESIGN CONSULTANT WHO WILL MAKE THE CHANGES ON THE ORIGINAL TRACINGS, LABEL EACH SHEET IN THE SET AS "RECORD DRAWINGS", AND RETURN IT TO THE CITY ENGINEER.
9. FOR TRENCHLESS CONSTRUCTION, CONTRACTOR SHALL DETERMINE THE LOCATIONS OF BORE PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
10. WATER METER COUNTS PER CITY OF HOUSTON CUSTOMER SERVICE ARE PROVIDED. CONTRACTOR TO VERIFY ALL EXISTING WATER SERVICES ARE FOUND AND TRANSFERRED.
11. PRIOR TO THE CONSTRUCTION OF THESE FACILITIES WITHIN OR BY THE MEMORIAL CITY REDEVELOPMENT AUTHORITY (MCRA), MCRA OR ITS ENGINEER WILL GIVE WRITTEN NOTICE TO THE CITY OF HOUSTON'S INTERAGENCY GROUP STATING THE DATE SUCH CONSTRUCTION WILL BE COMMENCED.
12. EXISTING UTILITY INFORMATION SHOWN IS NOT GUARANTEED TO BE ACCURATE NOR ALL INCLUSIVE. ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR IN ADVANCE OF CONSTRUCTION. ANY CONFLICT OR DISCREPANCY DISCOVERED MUST BE IMMEDIATELY BROUGHT TO THE ENGINEER'S ATTENTION.
13. THE CONTRACTOR SHALL NOTIFY THE CITY OF HOUSTON ENGINEERING DEPARTMENT, AND CENTERPOINT ENERGY AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF WORK, NOTIFICATIONS SHALL BE FOLLOWED WITH A LETTER, COPIES OF WHICH SHALL BE SENT TO THE ENGINEER.
14. THE CONTRACTOR, ON BEHALF OF THE OWNER, SHALL OBTAIN ALL PERMITS REQUIRED BY THE CITY OF HOUSTON, PRIOR TO STARTING CONSTRUCTION OF UTILITIES WITHIN THE ROAD RIGHT-OF-WAY.
15. GUIDELINES SET FORTH IN THE TEXAS "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS CURRENTLY AMENDED, SHALL BE OBSERVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAG MEN, SIGNAGE, STRIPING, AND WARNING DEVICES, ETC. DURING CONSTRUCTION - BOTH DAY AND NIGHT.
16. THE LOADING AND UNLOADING OF ALL PIPE, VALVES, HYDRANTS, MANHOLES, AND OTHER ACCESSORIES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDED PRACTICES AND SHALL AT ALL TIMES BE PERFORMED WITH CARE TO AVOID ANY DAMAGE TO THE MATERIAL. THE CONTRACTOR SHALL LOCATE AND PROVIDE THE NECESSARY STORAGE AREAS FOR THE MATERIALS AND EQUIPMENT.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SHIPPING AND STORING OF ALL MATERIALS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE SUCH MATERIAL AT THE POINT OF DELIVERY AND TO REJECT ALL DEFECTIVE MATERIAL. ANY DEFECTIVE MATERIAL INCORPORATED INTO THE WORK SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. THERE SHALL BE NO PAYMENT MADE FOR STORED MATERIAL.
18. ALL PIPE AND REINFORCEMENT STEEL SHALL BE KEPT FREE OF DIRT AND OTHER DEBRIS. ANY DAMAGE TO THE COATING OF THE VARIOUS MATERIALS MUST BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

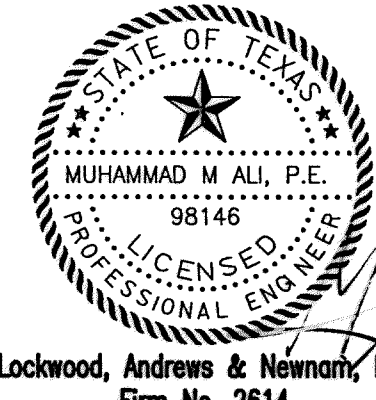
19. ACCESS TO ALL EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.
20. CONTRACTOR IS TO MAINTAIN A CLEAN PROJECT AREA, FREE FROM WORKMAN TRASH AND REFUSE, AT ALL TIMES.
21. CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF OSHA REGULATIONS AND STATE OF TEXAS LAWS CONCERNING EXCAVATION. TRENCH SAFETY SHALL BE DONE IN ACCORDANCE WITH LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.
22. ALL STATIONS ARE GIVEN WITH RESPECT TO THE BASELINE OF STREET RIGHT-OF-WAY UNLESS OTHERWISE NOTED.
23. SURFACE RESTORATION: AT THE END OF ALL CONSTRUCTION PROJECTS, THE CONTRACTOR SHALL RESTORE THE EXISTING FACILITIES, I.E. THE PROPERTY, TO EQUAL OR BETTER CONDITION THAN EXISTING SITE CONDITIONS PRIOR TO THE CONSTRUCTION. ALL FINISHED GRADES SHALL VARY UNIFORMLY BETWEEN THE FINISHED ELEVATIONS SHOWN.
24. FINAL ACCEPTANCE OF THE UTILITIES WILL NOT BE GIVEN TO THE CONTRACTOR UNTIL THEY ARE INSPECTED AND APPROVED BY TCEQ AND THE CITY OF HOUSTON. FINAL ACCEPTANCE OF THE PAVING WILL NOT BE GIVEN TO THE CONTRACTOR UNTIL IT IS INSPECTED AND APPROVED BY THE CITY OF HOUSTON.
25. PROVIDE MATS OR OTHER MEANS TO PREVENT OVERLOADING OR DAMAGE TO EXISTING ROADWAYS FROM TRACKED EQUIPMENT, TANDEM AXLE TRUCKS OR EQUIPMENT WHICH WILL DAMAGE EXISTING ROADWAY SURFACE.
26. THE CONTRACTOR SHALL REQUEST AND OBTAIN APPROVAL FROM THE ENGINEER FOR THE USE OF WELL POINTS WHEN TRENCH CONDITIONS REQUIRE THEM.

**STORM SEWER CONSTRUCTION NOTES:**

1. ALL STORM SEWERS SHALL BE REINFORCED CONCRETE PIPE, (C-76, CLASS III), AND SHALL BE INSTALLED, BEDDED, AND BACKFILLED IN ACCORDANCE WITH THE CITY OF HOUSTON DETAILED DRAWING NOS. 02317-02, 02317-03, 02317-05, 02317-06, AND 02317-07 (OCT.2002) AS APPLICABLE UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. ALL SEWER UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED AND FUTURE CURBS SHALL BE BACK FILLED WITH 1-1/2 SACK CEMENT/C.Y. STABILIZED SAND TO WITH IN ONE(1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACK FILLED WITH SUITABLE EARTH MATERIAL.
3. ALL TRENCH BACKFILLS SHALL BE IN 8" LIFTS, WITH TESTS TAKEN AT 100 FEET INTERVALS ON EACH LIFT, AND MECHANICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM D-698/AASHTO99).
4. CIRCULAR AND ELLIPTICAL REINFORCED CONCRETE PIPE SHALL BE INSTALLED USING RUBBER GASKET JOINT CONFORMING TO ASTM D443 AND ASTM C877 RESPECTIVELY.
5. ALL STORM SEWER PIPES AND INLET LEADS SHALL BE 24-INCH AND LARGER R.C.P. (C-76, CLASS III).
6. ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES AND INLETS ARE TO BE PLUGGED WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL PROVIDE 12" MINIMUM CLEARANCE AT STORM SEWER AND WATER LINE CROSSING.
8. ADJUST MANHOLE COVERS TO GRADE CONFORMING TO REQUIREMENTS OF SECTION 02086-ADJUSTING MANHOLES, INLETS AND VALVE BOXES TO GRADE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING AND RESTORING ANY BACK SLOPE DRAINAGE SYSTEM DISTURBED AS A RESULT OF HIS WORKS.
10. ALL DITCHES SHALL BE REGRADED TO PROPOSED ELEVATIONS TO INSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERLY BACK FILLED AND COMPACTED. ALL DISTURBED AREAS SHALL BE REGRADED, SEEDED, AND FERTILIZED.
11. ALL DRIVEWAYS WILL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURES.
12. ALL STORM SEWER MANHOLES SHALL BE STANDARD CITY OF HOUSTON TYPE "C" MANHOLES UNLESS OTHERWISE NOTED ON PLANS AND MUST INCLUDE THE WORDS "STORM SEWER".
13. ALL INLETS SHALL BE CITY OF HOUSTON TYPE B-B UNLESS OTHERWISE NOTED ON ALL THE PLANS. DEPTH OF INLETS SHALL BE INCREASED BEGINNING AT 2'-6" AND AS NECESSARY TO ACCOMMODATE THE DIAMETER AND ANGLE OF THE EXIT PIPE.

**PAVING CONSTRUCTION NOTES:**

1. ALL STOP SIGNS (R1-1) SHALL BE 30"x30" DIAMOND GRADE FACES.
2. ALL TEMPORARY AND PERMANENT SIGNAGE MUST COMPLY WITH THE "2011 TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AS CURRENTLY AMENDED.
3. ALL ROAD WIDTHS, CURB RADII, AND CURB ALIGNMENT ARE MEASURED TO THE FACE OF CURB. T.C. INDICATES TOP OF CURB. T.P. INDICATES TOP OF PAVEMENT ELEVATIONS.
4. ALL INTERSECTION CURB RETURN RADII SHALL BE 25 FEET FROM BACK-OF-CURB AND ALL COMMERCIAL DRIVEWAY RADII SHALL BE 10' FROM BACK-OF-CURB UNLESS NOTED OTHERWISE. MINIMUM GRADES SHALL BE 1.00% AND 0.60% RESPECTIVELY.
5. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT EACH CURB RETURN AND AT A MAXIMUM SPACING OF 80 FEET. LOAD TRANSMISSION DEVICES (3/4" DIA. X 18" LONG DOWELS) SHALL BE SPACED AT 12" C-C.
6. THE MAXIMUM SPACING BETWEEN LONGITUDINAL JOINTS SHALL NOT EXCEED 14 FEET. DEFORMED METAL STRIPS SHALL BE INSTALLED A MAXIMUM 1/2" BELOW THE FINISHED TOP OF PAVEMENT.
7. WHEN A THICKER PAVEMENT ROADWAY INTERSECTS WITH A THINNER PAVEMENT ROADWAY, THE THICKER PAVEMENT SHALL BE CONSTRUCTED FOR THE ENTIRE INTERSECTION, TO THE ENDS OF ALL CURB RETURNS.
8. THE PAVING CONTRACTOR SHALL PROTECT ALL UTILITIES, SIDEWALKS, PAVEMENT, ETC. AND SHALL REPAIR OR REPLACE AT HIS EXPENSE ANY FACILITIES DAMAGED DURING PAVING OR GRADING OPERATIONS.
9. THE PAVING SUBGRADE SHALL BE STABILIZED TO 8-INCH DEPTH WITH A MIXTURE OF 6% LIME BY DRY WEIGHT. LIME SHALL MEET THE REQUIREMENTS OF ITEM 260 OF THE TXDOT STANDARD SPECIFICATIONS FOR LIME TREATMENT METHOD USING COMMERCIAL LIME SLURRY. USE OF CARBIDE LIME OR BY-PRODUCT LIME IS PROHIBITED. STABILIZED SOILS SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY (+/-3 % OF OPTIMUM MOISTURE) PER ASTM D-698.
10. AREAS TO BE FILLED SHALL BE SCARIFIED AND COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY (+3% OF OPTIMUM MOISTURE) PER ASTM D-698 TO A DEPTH OF 6" PRIOR TO FILL PLACEMENT. FILL MATERIAL SHALL BE PLACED IN MAXIMUM 8" THICK LIFTS (MEASURED LOOSE) AND COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY (+3% OF OPTIMUM MOISTURE) PER ASTM D-698. FILL SHALL BE CLEAN EARTH AND BE FREE FROM TRASH, VEGETATION AND LARGE STONES. TEST REPORTS SHALL BE SUBMITTED PRIOR TO PLACEMENT OF PAVEMENT.
11. NECESSARY TESTING OF SUB GRADE AND PAVEMENT TO PROVE THAT THESE ITEMS MEET REQUIREMENTS SHALL BE DONE BY A COMMERCIAL TESTING LABORATORY ENGAGED BY THE OWNER.
12. WHERE PROPOSED PAVEMENT IS TO MEET EXISTING PAVEMENT, THE EXISTING REBAR OR DOWELS SHALL BE CLEANED AND TIED INTO THE PROPOSED PAVEMENT, USING A MINIMUM OF 30 BAR DIAMETERS LAPS. WHERE PROPOSED CONCRETE ENDS AT A CONSTRUCTION JOINT OR EXPANSION JOINT, THE REBAR SHALL BE EXTENDED A MINIMUM LENGTH OF 30 BAR DIAMETERS, COATED WITH ASPHALT AND WRAPPED WITH BURLAP.
13. ALL CONCRETE PAVEMENT SHALL BE EIGHT INCHES THICK UNLESS OTHERWISE SHOWN. CONCRETE SHALL HAVE A MINIMUM 3500 P.S.I. COMPRESSIVE STRENGTH AT 28 DAYS. REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60.
14. SIDEWALKS SHALL BE BUILT IN ACCORDANCE WITH CITY OF HOUSTON. ALL INTERSECTIONS SHALL BE CONSTRUCTED WITH WHEELCHAIR RAMPS, IN CONFORMANCE WITH THE GOVERNOR'S OFFICE OF TRAFFIC SAFETY MEMORANDUM DATED MAY 6, 1976 (HIGHWAY SAFETY ACT, 1973, SEC 208). AMERICANS WITH DISABILITIES ACT (ADA) AND TEXAS ACCESSIBILITY STANDARDS (TAS) SHALL BE COMPLIED WITH IN ALL SIDEWALK CONSTRUCTION.
15. CONCRETE WASH-OUT AREAS ARE TO BE PROVIDED BY THE CONTRACTOR AT A LOCATION ACCEPTABLE TO THE OWNER. UNDER NO CIRCUMSTANCES IS THE CONTRACTOR TO PERMIT CONCRETE TRUCKS TO WASH AT ANY AREA OTHER THAN THAT DESIGNATED.
16. STREET NAME SIGNS SHALL BE BUILT IN ACCORDANCE WITH CITY OF HOUSTON REQUIREMENTS AND SPECIFICATIONS, AND BEAR STREET NAMES AS PER RECORDED PLAT.
17. A DOUBLE-REFLECTORIZED BLUE TRAFFIC MARKER SHALL BE PLACED 6 INCHES OFFSET FROM THE PAVEMENT CENTERLINE AT ALL FIRE HYDRANT LOCATIONS, BY THE PAVING CONTRACTOR. HYDRANTS LOCATED AT INTERSECTIONS SHALL HAVE A MARKER PLACED ON EACH STREET. THERE WILL BE NO SEPARATE PAYMENT FOR THESE MARKERS.
18. SAW CUT EXISTING CURB AT EACH END AND KNOCK OUT CURB FROM BEGINNING TO END OF PROPOSED DRIVEWAY.
19. SAW CUT EXISTING PAVEMENT A MINIMUM OF 12 INCHES AWAY FROM FACE OF CURB (GUTTER LINE) AND BREAK OUT TO EXPOSE EXISTING REINFORCEMENT STEEL.
20. REINFORCING STEEL TO BE ELEVATED A MINIMUM OF 3" ABOVE SUBGRADE. (3" MANUFACTURED CHAIRS ARE REQUIRED WITH MAXIMUM SPACING OF 72 INCHES C/C EACH WAY).




Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

---

**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

---



**Lockwood, Andrews  
& Newnam, Inc.**  
A LEO A DALY COMPANY

---

LUMPKIN ROAD  
N-T17000-0012-3

**GENERAL CONSTRUCTION  
NOTES**

SHEET 1 OF 2

---

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

---

FILE NO. 1	FACILITY
DRAWING SCALE:	CITY DWG. NO.
NOT TO SCALE	
SHEET: 3 OF 226	

APP. REVISIONS DATE No. 9/2/2014 B:23-01 AW 9/2/2014 Notes.dgn 3-5-001-Construction 130-10284-001\F4-D-Product\Drawings\General\3-5-001-Construction Notes.dgn

**STREET AND BRIDGE**

- DEPARTMENT OF PUBLIC WORKS AND ENGINEERING'S "STANDARD CONSTRUCTION SPECIFICATIONS" AND "STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING" UNLESS OTHERWISE NOTED AND APPROVED ON THESE PLANS. THE DESIGN IS CONSISTENT WITH THE MINIMUM STANDARDS ESTABLISHED IN THE "INFRASTRUCTURE DESIGN MANUAL" REFERENCED AT [http://documents.publiworks.houstontx.gov/document-center/cat\\*view/88-engineering-and-construction/90-design-manuals/364-city-of-houston-infrastructure-design-manual.html](http://documents.publiworks.houstontx.gov/document-center/cat*view/88-engineering-and-construction/90-design-manuals/364-city-of-houston-infrastructure-design-manual.html).
- FILL AREAS ON PLANS SHALL BE FILLED IN LAYERS NOT EXCEEDING 8" IN DEPTH AND EACH LAYER SHALL BE COMPACTED TO NOT LESS THAN 95% STANDARD PROCTOR DENSITY PRIOR TO INSTALLATION OF WATER LINE AND FILL AREA SHALL BE SEEDED AND FERTILIZED WITHIN 10 WORKING DAYS.
- UTILITY CONTRACTOR SHALL PROVIDE TEMPORARY SILT BARRIER FENCE ON ALL NON-CURB INLETS WHICH WILL REMAIN IN PLACE AFTER UNDERGROUND CONTRACT IS COMPLETE.
- CONTRACTOR SHALL PROVIDE SILT BARRIER FENCE ON ALL STAGE 1 CURB INLETS.
- EXISTING PAVEMENTS, CURBS, DRIVEWAYS, AND SIDEWALKS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO CITY OF HOUSTON STANDARDS, WITH LATEST ADDENDUMS AND AMENDMENTS THERETO.
- CONDITION OF ROAD AND/OR RIGHT OF WAY, UPON COMPLETION OF JOB SHALL BE AS GOOD AS OR BETTER THAN PRIOR TO STARTING WORK.
- ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO SATISFACTION OF THE OWNING AUTHORITY.
- EXPOSE 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT, IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE #6 BARS, 24" LONG, 24" C-C DRILLED AND EMBEDDED 8" INTO CENTER OF THE EXISTING SLAB WITH "PRO ROC" OR EQUAL.
- CONTRACTOR TO TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES ALONG AREAS OF EXCAVATION.
- CONTRACTOR SHALL COMPLY WITH OSHA REGULATIONS AND STATE OF TEXAS LAWS CONCERNING EXCAVATION, TRENCHING AND SHORING AS SPECIFIED IN CITY OF HOUSTON ORDINANCE #87-1457.
- WHEEL CHAIR RAMPS SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF HOUSTON STANDARDS AT ALL INTERSECTIONS WHERE SIDEWALKS EXIST AND WHERE THE EXISTING CURB OR SIDEWALK IS DAMAGED OR REMOVED DURING CONSTRUCTION.
- WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING'S "STANDARD CONSTRUCTION SPECIFICATIONS" AND "STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING" UNLESS OTHERWISE NOTED AND APPROVED ON THESE PLANS. THE DESIGN SHOULD BE CONSISTENT WITH THE MINIMUM STANDARD ESTABLISHED IN THE "DESIGN MANUAL FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORMS DRAINAGE AND STREET PAVING".
- THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGES TO EXISTING WATER, WASTEWATER, STORM SEWER AND TRAFFIC SIGNAL CONDUITS, ALL DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE CITY OF HOUSTON, DEPT. OF PUBLIC WORKS AND ENGINEERING "STANDARD CONSTRUCTION SPECIFICATIONS" WITH LATEST ADDENDA AND AMENDMENTS THERETO, AT NO COST TO THE CITY OF HOUSTON.
- PRIOR TO STREET CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE DEPARTMENT OF PUBLIC WORKS AND ENGINEERING AT (PHONE) 832-394-9098 OR 832-395-4424(FAX) AND COMPLY WITH ALL REQUIREMENTS FOR THE ISSUANCE OF THE NECESSARY PERMITS/WORK ORDERS FOR STREET CONSTRUCTION.
- DOUBLE REFLECTORIZED BLUE TRAFFIC MARKERS SHALL BE PLACED 6-INCHES OFFSET OF THE CENTERLINE OF ALL FIRE HYDRANT LOCATIONS BY THE PAVING CONTRACTOR. HYDRANTS LOCATED AT INTERSECTIONS SHALL HAVE A BUTTON PLACED ON EACH STREET.

**TRAFFIC NOTES:**

- CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TEXAS MUTCD, MOST RECENT EDITION WITH REVISIONS) DURING CONSTRUCTION.
- NO TRAFFIC LANES ALONG LUMPKIN SHALL BE CLOSED DURING THE HOURS OF 6:00AM TO 9:00AM AND 4:00PM TO 7:00PM MONDAY THRU FRIDAY. NO LANES SHALL BE CLOSED IN RESIDENTIAL AREA FROM 7:00 PM TO 7:00 AM.
- CONTRACTOR SHALL COVER OPEN EXCAVATIONS WITH STEEL PLATES ANCHORED PROPERLY DURING NON-WORKING HOURS AND OPEN LANES FOR NORMAL TRAFFIC FLOW.
- OFF DUTY UNIFORMED POLICE OFFICER(S)/FLAGGER(S) IS/ARE REQUIRED TO DIRECT TRAFFIC WHEN LANES ARE CLOSED.
- IN THE EVENT THAT NO "TRAFFIC CONTROL PLANS" EXIST AS A PART OF CONTRACT DRAWINGS, CONTRACTOR MAY PREPARE PLANS\* AND SUBMIT TO THE PLAN REVIEW SECTION FOR APPROVAL TEN DAYS PRIOR TO IMPLEMENTATION.
- IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF "TRAFFIC CONTROL PLANS" DURING THE CONSTRUCTION THAN WHAT IS OUTLINED IN THE CONTRACT DRAWINGS, HE/SHE SHALL BE RESPONSIBLE FOR PREPARING AND SUBMITTING AN ALTERNATE SET OF PLANS\* TO THE PLAN REVIEW SECTION FOR APPROVAL TEN WORKING DAYS PRIOR TO IMPLEMENTATION.
- APPROVED COPIES OF TRAFFIC CONTROL PLANS AND MOBILITY PERMITS SHALL BE MADE AVAILABLE FOR INSPECTION AT THE JOB SITE AT ALL TIMES. CONTRACTORS MUST SECURE MOBILITY PERMITS FROM THE CITY'S#32S TRAFFIC MANAGEMENT AND MAINTENANCE BRANCH BEFORE CLOSING A LANE/SIDEWALK. THE REQUEST MUST BE MADE AT LEAST 10 DAYS IN ADVANCE OF THE CLOSURE. NOTE THAT WORKING HOURS MAY BE RESTRICTED OR THE REQUEST MAY BE DENIED. CALL 832-395-3020 FOR AN APPLICATION OR LOGON TO WWW.GIMS.HOUSTONTX.GOV.

\* THESE PLANS SHALL BE DRAWN TO SCALE ON REPRODUCIBLE MYLAR AND SEALED BY A LICENSED ENGINEER IN THE STATE OF TEXAS. PLANS WILL BECOME A PART OF THE CONTRACT DRAWINGS.

**STORM WATER QUALITY PRE-CONSTRUCTION INSPECTION REQUIREMENTS**

THE PROPERTY OWNER OR THE CONTRACTOR SHALL CONTACT THE HARRIS COUNTY STORM WATER QUALITY PERMITTING SECTION AT 713-956-3000 FOR A PRE-CONSTRUCTION INSPECTION PRIOR TO COMMENCING ANY CLEARING OR CONSTRUCTION ACTIVITIES ON THE SITE.

GENERAL CONSTRUCTION NOTES FOR STORM WATER POLLUTION PREVENTION PLAN:

STORM WATER POLLUTION PLAN (SWPPP) AND STORM WATER QUALITY MANAGEMENT PLAN (SWQMP) COMPLIANCE NOTES:

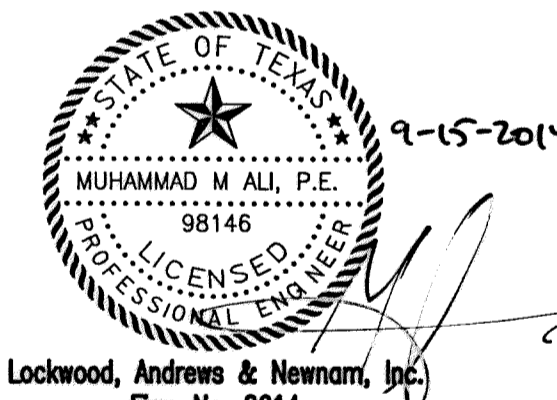
- ≤ 1.0 ACRE
  - IF AREA IS DISTURBED, (CLEARING AND GRUBBING AND/OR EXCAVATION INVOLVED)
  - PROVIDE BMP'S TO PREVENT ANY RUNOFF INTO THE CITY'S MS4
  - PROVIDE SWPPP NOTES FOR CONSTRUCTION PLANS
  - ANY CONSTRUCTION SITE RUNOFF INTO THE CITY'S MS4 IS A VIOLATION OF THE CITY STORM WATER ORDINANCE
- ≥ 1.0 < 5.0 ACRES
  - CONSIDERED SMALL CONSTRUCTION ACTIVITIES
  - SUBMIT A CONSTRUCTION SITE NOTICE (CSN) TO THE CITY AND TCEQ
  - POST A CONSTRUCTION SITE NOTICES AT THE CONSTRUCTION SITE
  - REQUIRED TO DEVELOP A SWP3
  - NOT REQUIRED TO SUBMIT A NOI OR NOT
  - ANY SUPPORTING CONCRETE OR ASPHALT PLANT IS SEPARATELY AUTHORIZED TO DISCHARGE UNDER AN INDIVIDUAL TPDES PERMIT
- ≤ 5.0 ACRES AND PART OF LARGER COMMON PLAN OF DEVELOPMENT THAT WILL EQUALLY DISTURB AREA THAT IS EQUAL TO OR GREATER (>) 5.0 ACRES
  - CONSIDERED LARGE CONSTRUCTION ACTIVITIES
  - CONTRACTOR IS REQUIRED TO SUBMIT AN NOI TO COH AND TCEQ
  - SUBMIT A STORM WATER QUALITY MANAGEMENT PLAN (SWQMP) FOR DESIGNED STRUCTURAL AND NONSTRUCTURAL CONTROL FEATURES
  - DEVELOP A SWP3 (SWPPP), STORM WATER POLLUTION PREVENTION PLAN TO BE RETAINED ON SITE DURING CONSTRUCTION OF PROJECTS FROM BEGINNING TO END
  - SUBMIT A NOT (NOTICE OF TERMINATION) WITHIN 30 DAYS AFTER FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE. ALL SILT FENCES OR TEMPORARY EROSION CONTROL FEATURES MUST BE REMOVED OR SCHEDULED FOR REMOVAL AS DEFINED UNDER THE SWP3
- 5.0 ACRES  
SAME AS ABOVE

**SWPPP CONSTRUCTION NOTES:**

- CONTRACTOR SHALL IMPLEMENT INLET PROTECTION DEVICES AND REINFORCED FILTER FABRIC BARRIER ALONG ROAD AND SIDE DITCHES AT LOCATIONS SHOWN ON THE TYPICAL STORM WATER POLLUTION PREVENTION (SWPP) PLANS TO KEEP SILT AND OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHES EVENTUALLY POLLUTING THE RECEIVING STORM.
- DURING THE EXCAVATION PHASE OF THE PROJECT, CONTRACTOR SHALL SCHEDULE THE WORK IN SHORT SEGMENTS SO THAT EXCAVATION MATERIAL CAN BE QUICKLY HAULED AWAY FROM THE SITE AND TO PREVENT IT FROM STAYING UNCOLLECTED ON THE EXISTING PAVEMENT. ANY LOOSE EXCAVATED MATERIAL WHICH FALLS ON PAVEMENTS OR DRIVEWAYS SHALL BE SWEEPED BACK INTO THE EXCAVATED AREA.
- CONTRACTOR SHALL CLEAN UP THE EXISTING STREET INTERSECTIONS AND DRIVEWAYS DAILY, AS NECESSARY, TO REMOVE ANY EXCESS MUD, SILT OR ROCK TRACKED FROM THE EXCAVATED AREA.
- CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
- CONTRACTOR TO INSPECT AND MAINTAIN THE AREAS LISTED BELOW AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.5 INCHES OR GREATER.
  - DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
  - AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
  - STRUCTURAL CONTROL MEASURES
  - LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE
- CONTRACTOR TO BE RESPONSIBLE TO MAINTAIN EXISTING DITCHES AND OR CULVERTS FOR UNOBSTRUCTED DRAINAGE AT ALL TIMES. WHERE SODDING IS DISTURBED BY EXCAVATION ON BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING

**WASTEWATER CONSTRUCTION NOTES**

- RECORD LOCATIONS OF ALL STACKS, SUTVS, ETC. ON "AS BUILT DRAWINGS".
- MAINTAIN SERVICE TO SEWERS DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR PROPERLY LOCATING AND/OR REPLACING SANITARY SEWER SERVICE LATERALS AFFECTED BY CONSTRUCTION. CITY DOES NOT WARRANTY LOCATION OR NUMBER OF ANY SANITARY LEADS SHOWN OR NOT SHOWN ON PLANS.
- USE PIPE MATERIALS AS CALLED OUT ON PLANS.
- SEE SANITARY SEWER SERVICE RECONNECTION CONSTRUCTION NOTES.
- USE MANDREL TESTING ONLY AS AN ACCEPTANCE TEST OF SEWER SEGMENTS.
- DIVERSION PUMPING IS CONSIDERED INCIDENTAL.
- SUBMIT CCTV INSPECTION OF NEW SANITARY SEWER PER SPEC 02558.



Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

---

**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

---

**Lockwood, Andrews  
& Newnam, Inc.**  
A LEO A DALY COMPANY

---

LUMPKIN ROAD  
N-T17000-0012-3  
**GENERAL CONSTRUCTION  
NOTES**

SHEET 2 OF 2

---

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
NOT TO SCALE		
SHEET:		
4 OF 226		

APP. REVISIONS DATE No. DATE  
 M:\Guthrie  
 8:23:00 AM  
 9/22/2014  
 Notes.dgn  
 9/22/2014  
 9:15-2014  
 130-10384-001\4-0-Product\om\4-01-Drawings\General\13-5-001-Construction

CENTERPOINT ENERGY

- LOCATIONS OF CENTERPOINT ENERGY MAIN LINES (TO INCLUDE CENTERPOINT ENERGY, INTRASTATE PIPELINE, LLC. WHERE APPLICABLE) ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE USUALLY NOT SHOWN. OUR SIGNATURE ON THESE PLANS ONLY INDICATES THAT OUR FACILITIES ARE SHOWN IN APPROXIMATE LOCATION. IT DOES NOT IMPLY THAT A CONFLICT ANALYSIS HAS BEEN MADE. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT (713)223-4567, 1-800-669-8344, OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.
  - WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (713) 945-8036 (7:00 A.M. TO 4:30 P.M.) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
  - WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
  - WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.
  - FOR EMERGENCIES REGARDING GAS LINES CALL (713)659-3552 OR (713)207-4200.
2. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

WARNING: OVERHEAD ELECTRICAL LINES

- OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:
  - \*\*\*ANY ACTIVITY WHERE PERSON OR THINGS MAY COME WITHIN SIX(6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND
  - \*\*\*OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10 FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES.
- PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT (713) 207-2222.
- ACTIVITIES ON OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY
- NO APPROVAL TO USE, CROSS OR OCCUPY CENTERPOINT FEE OR EASEMENT PROPERTY IS GIVEN. IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT OUR SURVEYING & RIGHT OF WAY DIVISION AT (713) 207-6248 OR (713) 207-5769.

AT&T TEXAS/SWB T FACILITIES

- THE LOCATIONS OF AT&T TEXAS/SWB T FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
- THE CONTRACTOR SHALL CALL 1-800-344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
- WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWB T FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWB T FACILITIES.
- WHEN AT&T TEXAS/SWB T FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.
- THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWB T UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.
- PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER ROOSEVELT LEE JR. AT (713)567-4552 OR EMAIL HIM AT RL7259@ATT.COM, IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWB T FACILITIES.

METRO

- THE CONTRACTOR SHALL CONTACT METRO BUS OPERATIONS BY EMAIL AT LEAST SEVEN(7) WORKING DAYS IN ADVANCE WHEN WORK IS SCHEDULED NEAR A BUS STOP. CONTRACTOR MUST EMAIL ALL THREE REPRESENTATIVES LISTED BELOW:
  - ZELMA.RIDLEY@RIDEMETRO.ORG
  - CARL.TAYLOR@RIDEMETRO.ORG
  - SHIRLEY.MITCHELL@RIDEMETRO.ORG

DETAILS

- CITY OF HOUSTON STANDARD DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATERLINES, STORM DRAINAGE, AND STREET PAVING ARE INCORPORATED IN PLANS BY REFERENCE AS IF COPIED VERBATIM. STANDARD DETAILS ARE AVAILABLE FOR DOWNLOAD AT THE FOLLOWING WEB ADDRESS: [http://documents.publicworks.houstontx.gov/document-center/cat\\*view/88-engineering-and-construction/96-drawings/212-standard-details.html](http://documents.publicworks.houstontx.gov/document-center/cat*view/88-engineering-and-construction/96-drawings/212-standard-details.html)
- DETAILS INCLUDED IN PLAN SET SUPERSEDE RELATED COH STANDARD DETAILS.

APP
REVISIONS
DATE
No.

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

NOTICE:  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINE CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

*[Signature]* 9/25/14  
DATE

AT&T UTILITY LINES SHOWN DATE

APPROVED FOR AT&T/SWB T UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*[Signature]* 10/7/14  
DATE

CENTERPOINT ENERGY/NATURAL GAS DATE

FACILITIES VERIFICATION ONLY

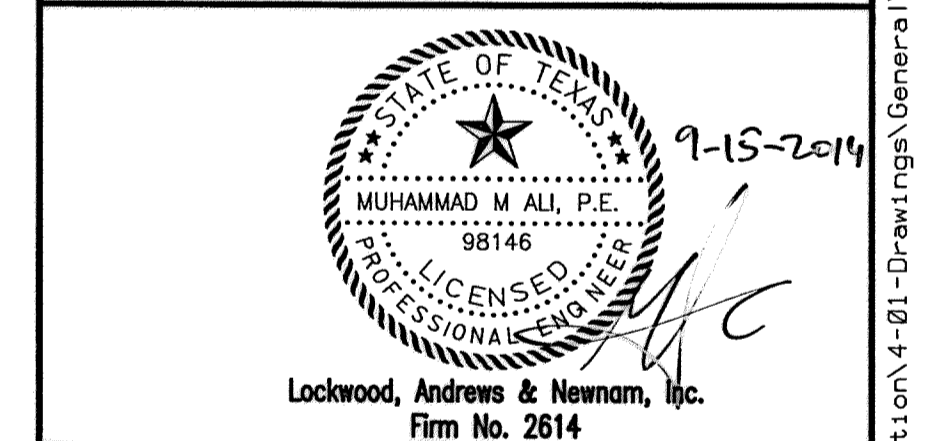
(THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*[Signature]* 10/7/14  
DATE

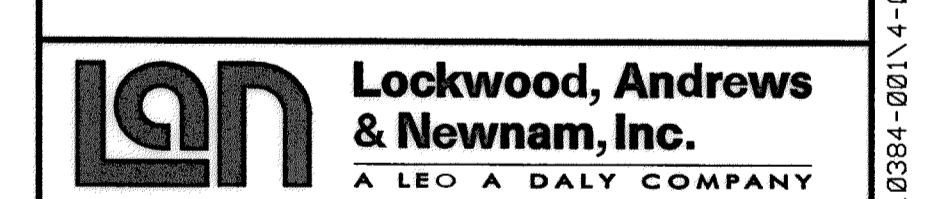
CENTERPOINT ENERGY/UNDERGROUND DATE

ELECTRICAL FACILITIES VERIFICATION ONLY.

(THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



MEMORIAL CITY REDEVELOPMENT AUTHORITY



LUMPKIN ROAD  
N-T17000-0012-3  
PRIVATE UTILITY NOTES

SHEET 1 OF 1  
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
NOT TO SCALE		
SHEET:		
5 OF 226		

9/2/2014  
 Notes.dgn  
 9-15-2014  
 4-01-Drawings\General\3-5-001-Construction  
 pw\ladpw.ladco.intr.projectwise\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\General\3-5-001-Construction\Notes.dgn

**LEGEND :**

SYMBOL	DESCRIPTION
	IRON PIPE OR IRON ROD MONUMENTS
	CENTERLINE OF RIGHT-OF-WAY
	SURVEY BASELINE
	EXISTING RIGHT-OF-WAY LINE
	PROPERTY LINE
	CENTERLINE OF DITCH
	DIMENSION LINE
	CURB LINE
	EDGE OF ASPHALT PAVEMENT
	SIDEWALK
	SHRUBS
	TREE
	BUILDING
	SLAB
	POST, WOOD OR METAL
	INDEX CONTOUR
	WATER LINE
	WATER VALVE (GATE OR BUTTERFLY)
	TAPPING SLEEVE AND VALVE
	FIRE HYDRANT
	WATER METER
	CENTERPOINT ENERGY GAS LINE
	GAS METER
	SANITARY SEWER LINE
	SANITARY SEWER LINE, MANHOLE & CLEANOUT
	STORM SEWER LINE
	STORM SEWER LINE AND MANHOLE
	STORM SEWER JUNCTION BOX
	CURB INLET
	GRATE INLET
	CONCRETE DRAIN
	CULVERT

SYMBOL	DESCRIPTION
	HOUSTON LIGHTING & POWER CO CONDUIT & MANHOLE
	POWER POLE W/ OVERHEAD LINES
	POWER POLE W/ DOWN GUY
	TRAFFIC LIGHT POLE
	MARKER
	BUSINESS SIGN
	SIGN POST
	FENCE LINE (CHAIN LINK OR OTHER)
	FENCE LINE (BARBED WIRE)
	SBC MANHOLE & OVERHEAD & BURIED CABLE
	TELEPHONE BOX
	STREET LIGHT (CANTILEVERED ON WOODEN POLE)
	STREET LIGHT (CANTILEVERED ON ORNAMENTAL POLE)

SYMBOL	DESCRIPTION
	NORTH OR EAST PROPERTY LINE
	SOUTH OR WEST PROPERTY LINE
	NORTH OR EAST DITCH OR CURB
	SOUTH OR WEST DITCH OR CURB
	CENTER LINE OF PAVEMENT
	HOUSTON LIGHTING & POWER CO CONDUIT
	GAS LINE
	SOUTHWESTERN BELL COMMUNICATION CONDUIT
	WATER LINE
	SANITARY SEWER LINE (24" AND SMALLER)
	SANITARY SEWER LINE (30" AND LARGER)
	STORM SEWER LINE (24" AND SMALLER)
	STORM SEWER LINE (30" AND LARGER)
	HOUSTON LIGHTING & POWER CO MANHOLE
	SOUTHWESTERN BELL TELEPHONE MANHOLE
	SANITARY SEWER MANHOLE & CLEANOUT
	STORM SEWER MANHOLE

Ⓜ INFORMATION OBTAINED FROM RECORD DRAWINGS. NOT FIELD VERIFIED

SYMBOL	DESCRIPTION
	BORING LOCATION
	POINT OF INTERSECTION (PI)
	POINT OF CURVE (PC) OR POINT OF TANGENCY (PT)
	WATER LINE
	TAPPING SLEEVE & VALVE
	FIRE HYDRANT
	SANITARY SEWER LINE
	SANITARY SEWER MANHOLE
	STORM SEWER LINE
	STORM SEWER MANHOLE
	CURB INLET
	FACE OF CURB
	PAVEMENT HEADER
	CONCRETE WALK
	MATCH LINE
	FLOW DIRECTION
	PROPOSED RIGHT-OF-WAY LINE
	BRICK PAVERS
	PROPOSED SIGN

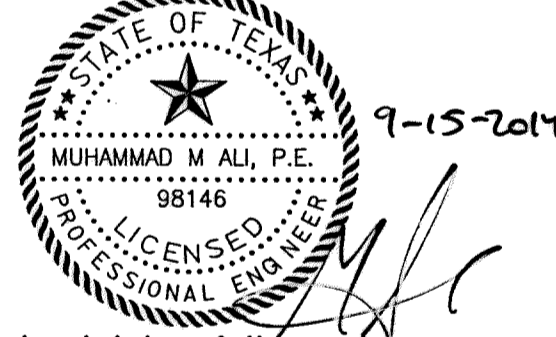
SYMBOL	DESCRIPTION
	WATER LINE (20" AND SMALLER)
	SANITARY SEWER LINE (24" AND SMALLER)
	SANITARY SEWER LINE (30" AND LARGER)
	STORM SEWER LINE (24" AND SMALLER)
	STORM SEWER LINE (30" AND LARGER)

	SANITARY SEWER MANHOLE
	STORM SEWER MANHOLE
	STORM SEWER INLET

	TOP OF CURB OR CENTERLINE OF OPEN DITCH PAVING
	DIP WITH RESTRAINED JOINTS

**ABBREVIATIONS :**

&	AND	S	SOUTH
AVE	AVENUE	SAN	SANITARY
BC	BEHIND CURB	SHT	SHEET
CIP	CAST IRON PIPE	ST	STREET
CLR	CLEAR	STA	STATION ALONG BASELINE OR CENTERLINE
CMF	CORRUGATED METAL PIPE	STM	STORM
COH	CITY OF HOUSTON	SWR	SEWER
CONC	CONCRETE	SBC	SOUTHWESTERN BELL COMMUNICATION COMPANY
CONSTR	CONSTRUCTION	T	TANGENT
CPE	CENTERPOINT ENERGY	TBM	TEMPORARY BENCH MARK
DIA	DIAMETER	TOC OR TC	TOP OF CURB
DR	DRAWING	TEMP	TEMPORARY
DWG	DRAWING	TP	TOP OF PAVEMENT
E	EAST	TS & V	TAPPING SLEEVE AND VALVE
EL OR ELEV	ELEVATION	TYP	TYPICAL
EOP	EDGE OF PAVEMENT	UG	UNDERGROUND
E/R	END OF CURB RETURN	VC	VERTICAL CURVE
ESM	EASEMENT	W	WEST
EXIST	EXISTING	W/W	WITH
FC	FACE OF CURB	WL	WATER LINE
F-F	FACE-TO-FACE	WP	WOOD POLE
FH	FIRE HYDRANT	WV	WATER VALVE
FL	FLOWLINE		
FT	FEET		
GV & B	GATE VALVE AND BOX		
HCFC	HARRIS COUNTY FLOOD CONTROL DISTRICT		
HL & P	HOUSTON LIGHTING AND POWER		
HMAC	HOT MIXED ASPHALTIC CONCRETE		
HPS	HIGH-PRESSURE SODIUM		
HWY	HIGHWAY		
ID	INSIDE DIAMETER		
IE	INVERT ELEVATION		
IP	IRON PIPE		
IR	IRON ROD		
JT	JOINT		
JUNCT	JUNCTION		
LF	LINEAR FEET		
LN	LANE		
LT	LEFT		
MAX	MAXIMUM		
METRO	METROPOLITAN TRANSIT AUTHORITY		
MH	MANHOLE		
MIN	MINIMUM		
MON	MONUMENT		
N	NORTH		
NO	NUMBER		
NTS	NOT TO SCALE		
OCEL	ON CURVE ELEVATION		
OFS	OFFSET		
OH	OVERHEAD		
PC	POINT OF CURVATURE		
PCC	POINT OF COMPOUND CURVATURE		
PERM	PERMANENT		
PI	POINT OF INTERSECTION		
PROP	PROPOSED		
PT	POINT		
PT	POINT OF TANGENCY		
PVC	POINT OF VERTICAL CURVATURE, POLYVINYL CHLORIDE PIPE		
PVI	POINT OF VERTICAL INTERSECTION		
PVM T	PAVEMENT		
PVT	POINT OF VERTICAL TANGENCY		
RD	RECORD DRAWING		
R	RADIUS OF CIRCULAR CURVE		
RCB	REINFORCED CONCRETE BOX		
RCP	REINFORCED CONCRETE PIPE		
REINF	REINFORCED		
REMOV	REMOVABLE		
ROW	RIGHT OF WAY		
RD	ROAD		
RRPM	REFLECTIVE REMOVABLE PAVEMENT MARKERS		
RT	RIGHT		
RJ	RESTRAINED JOINT		
RW	RETAINING WALL		

  
9-15-2014

**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

**LUMPKIN ROAD  
N-T17000-0012-3**

**SYMBOLS AND ABBREVIATIONS**

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO. 1	FACILITY	
DRAWING SCALE:	CITY DNG NO.	
NOT TO SCALE		
SHEET:	6 OF 226	

KEYED NOTES

- ① PROPOSED CONCRETE PIPE STUB WITH RING GRATE AS SHOWN ON STANDARD DETAIL 02084-05 - STORM SEWER RING GRATE FOR OPEN END OF 18" TO 72" RCP STUBS TO DITCH, AT A MINIMUM OF 0.5 FEET BELOW THE EXISTING DITCH FLOW LINE. REALIGN DITCH AS DIRECTED BY THE CITY ENGINEER.
- ② PROPOSED FLEXIBLE BASE AS SHOWN ON STANDARD DETAIL 02741-01 HOT-MIX ASPHALTIC CONCRETE PAVEMENT DETAILS.
- ③ PROPOSED SAWED JOINT AND EXPOSE 15-INCHES OF REINFORCING STEEL. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. SEE NOTE 9.
- ④ PROPOSED STANDARD CONCRETE CURB AND GUTTER AS SHOWN ON STANDARD DETAIL 02771-01 - CURB, CURB AND GUTTER AND HEADER DETAILS.
- ⑤ DOWEL ON 6-INCH CURB AFTER ASPHALTIC SURFACING IS IN PLACE, OR INTO EXISTING CONCRETE PAVEMENT, AS APPLICABLE.
- ⑥ REMOVE EXISTING SIDEWALK.
- ⑦ PROPOSED 3/4-INCH BOARD EXPANSION OR PREMOLDED NON-EXTRUDING JOINT BETWEEN SIDEWALK AND CURB.
- ⑧ REMOVE A SUFFICIENT LENGTH OF CONCRETE PIPE, AS DETERMINED BY THE ENGINEER, AND CONNECT TO PROPOSED INLET WITH REINFORCED CONCRETE PIPE OF LIKE DIAMETER.
- ⑨ HORIZONTAL DOWELS SHALL BE No. 6 BARS, 24 INCHES LONG, DRILLED AND EMBEDDED 12 INCHES INTO THE CENTER OF THE EXISTING SLAB WITH PO ROC OR EQUAL. DOWELS SHALL BE 12 INCHES CENTER TO CENTER, UNLESS OTHERWISE SPECIFIED.
- ⑩ THE CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC SIGNAL DIVISION, 10 WORKING DAYS IN ADVANCE FOR RELOCATION OF EXISTING TRAFFIC SIGNAL POLES.
- ⑪ ADJUST EXISTING INLET TO FIT NEW GRADE AND ALIGNMENT.
- ⑫ DECREASE CURB EXPOSURE FROM 6 INCHES TO 2 INCHES IN 1 FOOT.
- ⑬ DECREASE CURB EXPOSURE FROM 6 INCHES TO 2 INCHES IN 4 FOOT.
- ⑭ DECREASE CURB EXPOSURE FROM 6 INCHES TO 0 INCHES IN 2 FOOT.
- ⑮ PROPOSED REINFORCED CONCRETE MEDIAN/MEDIAN NOSE SHALL BE COLORED BLACK FOR CONCRETE ROADWAYS AND UNCOLORED FOR ASPHALTIC CONCRETE ROADWAYS.
- ⑯ RIP-RAP SHALL BE PLACED ON SLOPES AND DITCHES AS DIRECTED BY THE ENGINEER.
- ⑰ CONVERT EXISTING INLET OR MANHOLE WITH INLET TOP TO MANHOLE.
- ⑱ REMOVE EXISTING CULVERT.
- ⑲ REMOVE AND REPLACE PIPE CULVERT AS DIRECTED BY THE ENGINEER.
- ⑳ EXISTING STRUCTURE TO BE REMOVED.
- ㉑ BREAK INTO BARREL OF MONOLITHIC REINFORCED CONCRETE STORM SEWER. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR STORM SEWER OR LEAD, AS APPLICABLE.
- ㉒ REMOVE EXISTING INLET AND LEAD. PLUG AS SHOWN.
- ㉓ REMOVE EXISTING CONCRETE PAVEMENT, CONCRETE BASE, AND CEMENT STABILIZED SHELL BASE COURSE WITH OR WITHOUT ASPHALT SURFACING.
- ㉔ PROPOSED ASPHALT TRANSITION.
- ㉕ REMOVE INLET AND EXTEND LEAD.
- ㉖ MEET EXISTING CURB OR CURB AND GUTTER.
- ㉗ PROPOSED WHEELCHAIR RAMP, AS SHOWN ON STANDARD DETAIL 02775-02 WHEELCHAIR RAMP DETAILS.
- ㉘ ADJUST EXISTING INLET AND MANHOLE FRAME AND COVER TO FIT NEW GRADE.
- ㉙ REMOVE CURB OR CURB AND GUTTER FOR GRADE AND ALIGNMENT.
- ㉚ ADJUST EXISTING WATER VALVE BOXES TO NEW PAVING GRADE. REPLACE MISSING OR DAMAGED VALVE BOXES AND COVERS.
- ㉛ REPLACE TYPE B INLET OR TYPE A INLET.
- ㉜ PROPOSED PAVEMENT MARKINGS AS SHOWN ON STANDARD DETAIL 02763-01 - PAVEMENT MARKING DETAILS.
- ㉝ PROPOSED WHITE PLASTIC MARKER AS SHOWN ON TRAFFIC AND TRANSPORTATION DRAWING, STANDARD ELONGATED WORD AND ARROW SYMBOL DESIGN DETAILS FOR PAVEMENT MARKINGS.
- ③④ PROPOSED PLASTIC MARKER, AS SHOWN ON TRAFFIC AND TRANSPORTATION DRAWING, STANDARD FOR LEFT TURN CHANNELIZATION.
- ③⑤ PROPOSED STANDARD CONCRETE PAVING HEADER AS SHOWN ON STANDARD DETAIL 02771-01 - CURB, CURB AND GUTTER AND HEADER DETAILS.
- ③⑥ REMOVE AND REPLACE DRIVEWAY TO ROW, EXCEPT WHERE NOTED OTHERWISE ON PLANS, AT WIDTHS AS SHOWN ON DETAILS.
- ③⑦ REPLACE CONCRETE PAVEMENT WITH OR WITHOUT ASPHALT OVERLAY WITH 6 INCH OF CONCRETE PAVEMENT AND 6 INCH CURBS TO THE LIMITS AS SHOWN ON STANDARD DETAIL 02951-02 - STREET CUT PAVEMENT REPLACEMENT - CONCRETE PAVEMENT OVER 5 YEARS IN AGE. (JUNE 2002)
- ③⑧ REPLACE ASPHALT PAVEMENT OR CONCRETE PAVEMENT WITH ASPHALT OVERLAY TO THE LIMITS AS SHOWN ON STANDARD DETAIL 02951-03 STREET CUT PAVEMENT REPLACEMENT - ASPHALT PAVEMENT FOR PAVEMENT FOR PAVEMENT FOR ALL AGES. (JUNE 2002)
- ③⑨ REMOVE EXISTING PAVEMENT (ALL TYPES AND THICKNESSES)
- ④① DRIVEWAY EXTENDS BEYOND ROW AS SHOWN ON THE PLANS AND AS NOTED IN THE DRIVEWAY TABULATION TABLE.
- ④② TRANSITION PROPOSED SIDEWALK TO EXISTING SIDEWALK LEVEL WITH A MINIMUM SLOPE OF 20:1.
- ④③ EXISTING STRUCTURE/UTILITY TO REMAIN.
- ④④ CAST IN PLACE TOE WALL AS NEEDED FOR GRADING. REFER TO TOE WALL DETAILS SHEET FOR MORE INFORMATION.
- ④⑤ TIE PROPOSED CONCRETE PAVEMENT TO EXISTING CONCRETE PAVEMENT HEADER. IF EXISTING PAVEMENT DOES NOT HAVE EXISTING EXPOSED REINFORCING STEEL, USE HORIZONTAL DOWELS.
- ④⑥ SAW CUT EXISTING PAVEMENT.
- ④⑦ REMOVE AND DISPOSE OF EXISTING MANHOLE.
- ④⑧ EXISTING POWER POLE TO BE REMOVED. (BY OTHERS; CENTERPOINT ENERGY)
- ④⑨ REMOVE & RELOCATE EXISTING TRAFFIC SIGN
- ④⑩ ABANDON STORM SEWER MANHOLE, PLUG AND ABANDON LEAD
- ④⑪ ADJUST EXISTING MANHOLE FRAME AND COVER TO FIT NEW GRADE AND ALIGNMENT (BY PRIVATE UTILITY COMPANY)
- ④⑫ RELOCATE AND RECONNECT EXISTING WATER METER.
- ④⑬ RELOCATE EXISTING ELECTRICAL BOX
- ④⑭ ADJUST EXISTING GRATE FRAME AND COVER TO FIT NEW GRADE
- ④⑮ REMOVE AND REPLACE EXISTING LEAD
- ④⑯ ADJUST EXIST WATER VALVE BOXES/METER BOXES TO NEW GRADE. REPLACE ALL MISSING OR DAMAGED WATER VALVE BOXES/METER BOXES AND COVERS.
- ④⑰ REMOVE AND DISPOSE VALVE BOXES ON ABANDONED WATER LINES. REMOVE RISER TO BELOW PROPOSED PAVEMENT SUBGRADE.
- ④⑱ FOLLOW PROCEDURES IN SPEC SECTION 02516-CUT, PLUG AND ABANDONMENT OF WATER LINES.
- ④⑳ PROPOSED PEDESTRIAN RAMP WITH MAXIMUM 1:15 SLOPE FOR GRADE CHANGE AT DRIVEWAYS AND INTERSECTIONS. SEE STANDARD DETAILS.
- ⑤① REMOVE EXISTING GRAVEL PAVEMENT
- ⑤② SEE LANDSCAPE/HARDSCAPE DETAILS SHEETS FOR MORE DETAILS.
- ⑤③ PROPOSED TYPE 1 TXDOT PEDESTRIAN RAMP. SEE STANDARD DETAIL 12-A FOR DETAILS.

**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

---

**Lockwood, Andrews  
& Newnam, Inc.**  
A LEO A DALY COMPANY

---

LUMPKIN ROAD  
N-T17000-0012-3

KEYED NOTES

---

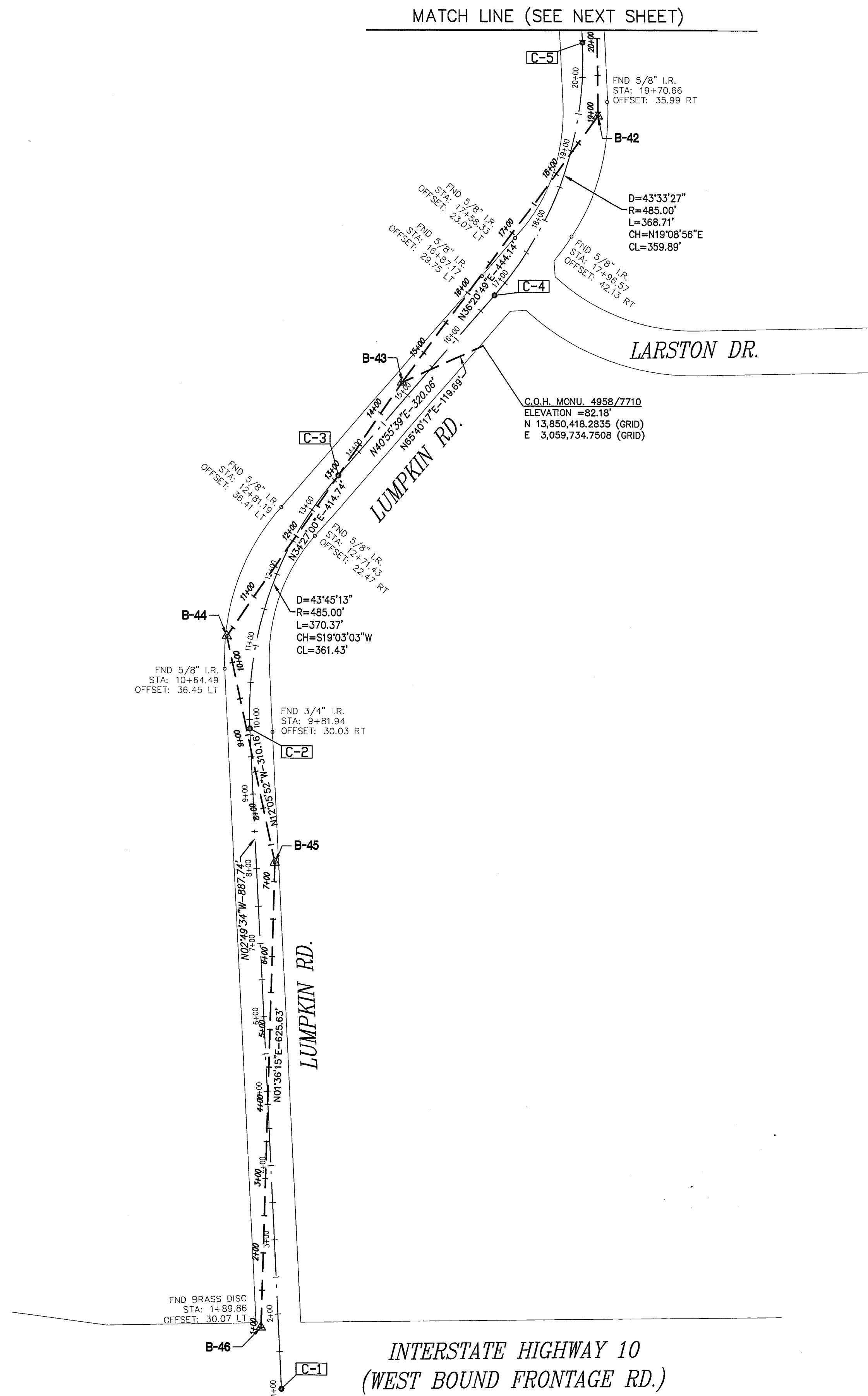
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
NOT TO SCALE	
SHEET:	
7 OF 226	

REVISIONS  
 No. DATE  
 9/27/2014 8:23:20 AM  
 pw \\ ladbw. ladbw. intri.projectwise\Documents\Projects\130-10384-001\4-B-Drawings\General\7-001-Key Notes.dgn

S:\Proj-2013\13082 (10037 LUMPKIN)\Dwg\SCM\SCM-13082.dwg March 26 2014



**SURVEY BASELINE POINTS DATA (TEMPORARY BENCHMARK)**

POINT NO.	NORTHING (SURFACE)	EASTING (SURFACE)	NORTHING (GRID)	EASTING (GRID)	ELEV. (FT.)	S. BL. STA.	D. BL. STA.	OFFSET (FT.)	DESCRIPTION
B-40	13,853,388.55	3,060,249.01	13,851,587.84	3,059,851.23	86.39	27+57.28	28+08.56	18.18 RT	SET MAG NAIL W/SHNR
B-41	13,852,974.60	3,060,281.65	13,851,173.95	3,059,883.87	85.29	23+42.04	23+93.54	31.79 RT	SET 1/2" I.R. W/CAP
B-42	13,852,527.26	3,060,286.69	13,850,726.67	3,059,888.90	85.18	18+94.67	19+50.97	26.24 RT	SET 1/2" I.R. W/CAP
B-43	13,852,169.53	3,060,023.45	13,850,368.98	3,059,625.70	82.25	14+50.53	15+08.09	17.04 LT	SET "X" CUT
B-44	13,851,827.53	3,059,788.84	13,850,027.03	3,059,391.12	80.32	10+35.79	11+04.75	40.32 LT	SET 1/2" I.R. W/CAP
B-45	13,851,524.26	3,059,853.85	13,849,723.80	3,059,456.12	80.03	7+25.63	8+07.15	24.86 RT	SET 1/2" I.R. W/CAP
B-46	13,850,898.87	3,059,836.33	13,849,098.49	3,059,438.60	78.75	1+00	1+83.38	23.46 LT	SET 5/8" I.R. W/CAP
B-50	13,852,974.20	3,059,529.31	13,851,173.55	3,059,131.63	85.59	8+52.24	-----	-----	SET 1/2" I.R.
B-52	13,853,854.62	3,060,197.63	13,852,053.85	3,059,799.85	86.60	32+26.17	32+76.49	11.77 LT	SET 1/2" I.R. W/CAP
B-53	13,854,337.53	3,060,187.45	13,852,536.70	3,059,789.68	85.72	37+09.19	37+59.36	0.22 RT	SET "X" CUT
B-54	13,853,390.06	3,060,439.61	13,851,689.36	3,060,041.81	87.72	2+90.61	3+09.32	7.40 RT	SET MAG NAIL

**TEMPORARY BENCHMARKS**

T.B.M. B-40  
SET MAG NAIL W/SHNR AT EAST SIDE OF LUMPKIN RD. APPROX. 418 FT NORTH OF LUMPKIN RD. AND WESTVIEW DR. INTERSECTION.  
D. STA: 28+08.56/18.18' RT  
ELEV.=86.39'

T.B.M. B-41  
SET 1/2" I.R. W/KUO CAP AT NORTHEAST CORNER OF LUMPKIN RD. AND WESTVIEW DR. INTERSECTION.  
D. STA: 23+93.54/31.79' RT  
ELEV.=85.29'

T.B.M. B-42  
SET 1/2" I.R. W/KUO CAP AT EAST SIDE OF LUMPKIN RD. APPROX. 361 FT SOUTH OF LUMPKIN RD. AND WESTVIEW DR. INTERSECTION.  
D. STA: 19+50.97/26.24' RT  
ELEV.=85.17'

T.B.M. B-43  
SET "X" CUT AT WEST SIDE OF LUMPKIN RD. APPROX. 166 FT SOUTH OF LUMPKIN RD. AND LARSTON DR. INTERSECTION.  
D. STA: 15+08.09/17.04' LT  
ELEV.=82.25'

T.B.M. B-44  
SET 1/2" I.R. W/KUO CAP AT WEST SIDE OF LUMPKIN RD. APPROX. 587 FT SOUTH OF LUMPKIN RD. AND LARSTON DR. INTERSECTION.  
D. STA: 11+04.75/40.32' LT  
ELEV.=80.32'

T.B.M. B-45  
SET 1/2" I.R. W/KUO CAP AT EAST SIDE OF LUMPKIN RD. APPROX. 622 FT NORTH OF LUMPKIN RD. AND INTERSTATE HIGHWAY 10. INTERSECTION.  
D. STA: 8+07.15/24.86' RT  
ELEV.=80.03'

T.B.M. B-46  
SET 5/8" I.R. W/KUO CAP AT NORTHWEST CORNER OF LUMPKIN RD. AND INTERSTATE HIGHWAY 10. INTERSECTION.  
D. STA: 1+83.38/23.46' LT  
ELEV.=78.75'

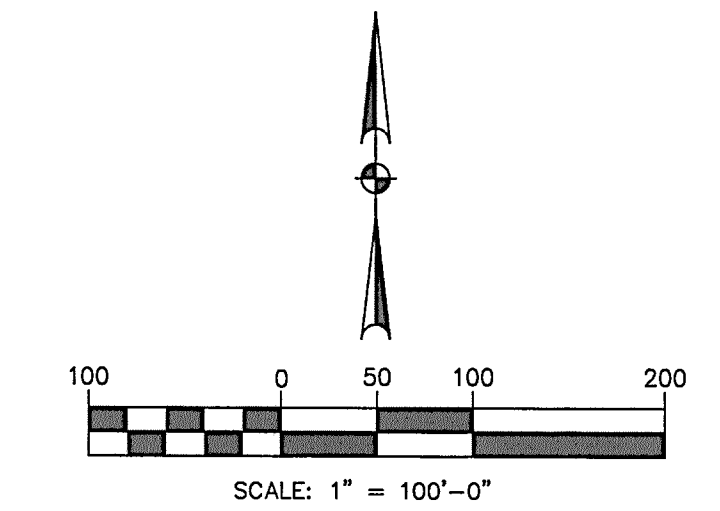
T.B.M. B-48  
SET "X" CUT AT CENTER LINE OF WESTVIEW DR. APPROX. 175 FT WEST OF LUMPKIN RD. AND WESTVIEW DR. INTERSECTION.  
D. STA: 1+17.93/7.33' LT  
ELEV.=85.53'

T.B.M. B-50  
SET 1/2" I.R. LOCATED AT THE SOUTHWEST CORNER OF DETENTION POND AND NORTH SIDE OF WESTVIEW DRIVE.  
ELEV.=85.59'

T.B.M. B-52  
SET 1/2" I.R. W/KUO CAP AT WEST SIDE OF LUMPKIN RD. APPROX. 456 FT NORTH OF LUMPKIN RD. AND NORTHBROOK DR. INTERSECTION.  
D. STA: 32+76.49/11.77' LT  
ELEV.=86.60'

T.B.M. B-53  
SET "X" CUT AT NORTH SIDE OF LUMPKIN RD. AND NORTHBROOK DR. INTERSECTION.  
D. STA: 37+59.36/0.22' RT  
ELEV.=85.72'

T.B.M. B-54  
SET MAG NAIL LOCATED APPROX. 418' NORTH OF WESTVIEW AND 182' EAST OF LUMPKIN ROAD.  
D. STA: 3+09.32/7.40 RT  
ELEV.=87.72'



**BENCHMARK:**  
CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET WEST OF LARSTON DR. INTERSECTION IN KEYMAP 4492  
ELEV.=82.18 FEET NAVD 88 (COR596) BASED ON GEOID '09.

**HORIZONTAL DATUM:**  
ALL HORIZONTAL COORDINATES ARE BASED ON TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD 83, 1993 ADJUSTMENT.  
THE COORDINATES & DISTANCES SHOWN ARE SURFACE UNLESS OTHERWISE NOTED, AND MAY BE CONVERTED TO GRID BY MULTIPLYING BY A SCALE FACTOR OF 0.999870017.

**LEGEND:**  
B-XX SURVEY CONTROL POINT NUMBER  
C-X DESIGN BASELINE POINT NUMBER  
▲ SURVEY CONTROL POINT  
● DESIGN BASELINE POINT  
● CITY OF HOUSTON MONUMENT  
D. BL: DESIGN BASELINE ---  
S. BL: SURVEY BASELINE ---

MEMORIAL CITY REDEVELOPMENT AUTHORITY

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

**KUO & Associates, Inc.**  
Consulting Engineers & Surveyors  
10700 Richmond Ave., Suite 113, Houston, Texas 77042  
Tel: 713-975-8769, Fax: 713-975-9920, www.kuoassociates.com  
Texas Firm Registration No. F-4578

STATE OF TEXAS  
SHAHEEN CHOWDHURY  
5858  
REGISTERED PROFESSIONAL LAND SURVEYOR

SURVEYED BY:  
KUO & ASSOCIATES  
FB No. P-5857  
Shahen Chowdhury  
07/29/14

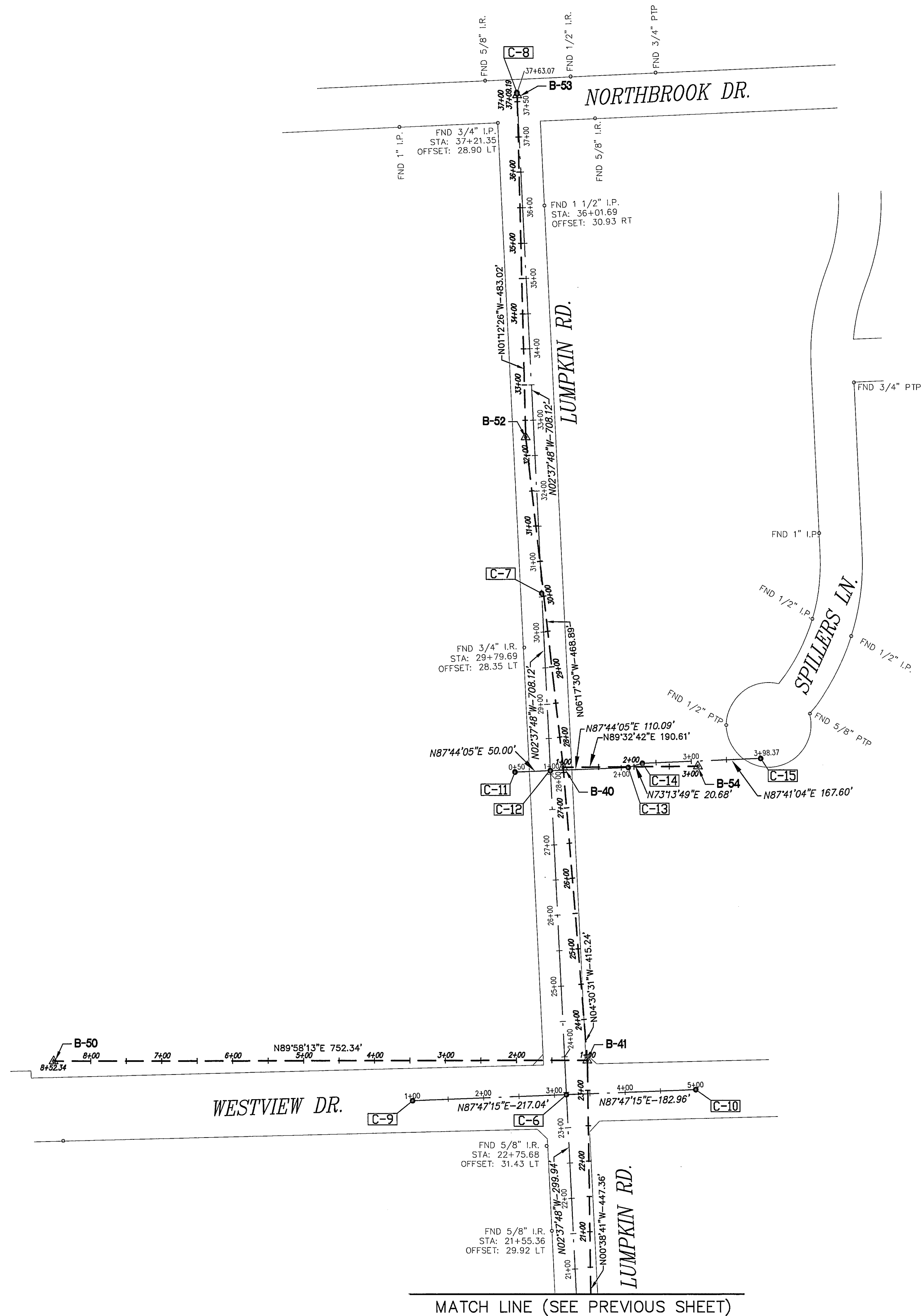
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

LUMPKIN ROAD  
SURVEY CONTROL MAP  
SHEET 1 OF 2

WBS NO.	N-T17000-0012-3
DRAWING SCALE	1" = 100'
CITY OF HOUSTON PM	
SHEET NO. 8 OF 226	



S:\Proj-2013\13082 (10037 LUMPKIN)\dwgs\SCM\SCM-13082.dwg March 26 2014



MATCH LINE (SEE PREVIOUS SHEET)

**CITY OF HOUSTON**

CITY SURVEY MARKER 4958  
7710

ON MAP SHEET: 4958 A4  
Elevations Adjustment  
82.18 FEET (NAVD 88, 2001-Add) *2013*

NAD83 (CORS 96 EPOCH 2002.00) Texas S. C. Zone  
N = 13,850,418.2835  
E = 3,059,734.7508  
Method For Vert. GPS  
Ellipsoid Height = -8.2746 (FT)

Lat. = 29°47'19.78717" (N)  
Lon. = 95°33'33.06504" (W)  
Method For Horizontal GPS

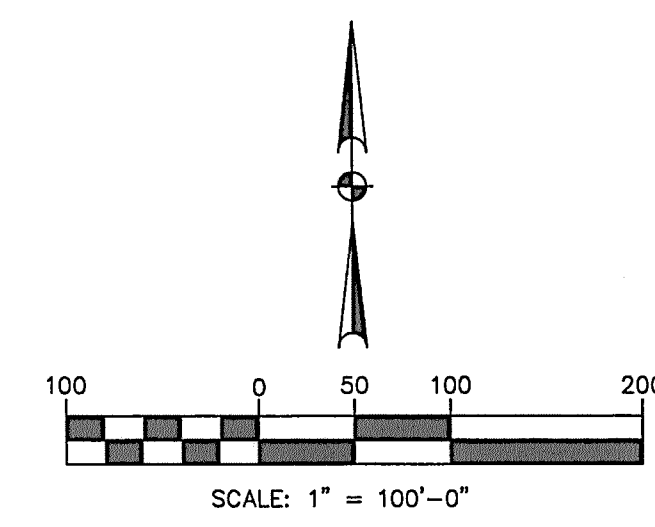
General Location: EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION.

Date Set: 8-15-2010 Type of Mark: 4A  
Survey Markers Useful As Azimuth From Station

NOTES:  
1. Scale Factor (S.F. 0.999870017)  
2. Surface = Grid  
S.F.

Surveyed By: **KUO & ASSOCIATES, INC.**  
10700 RICHMOND AVE., SUITE 113  
HOUSTON, TX 77042

*Shaheen Chowdhury*  
08/15/10



**BENCHMARK:**  
CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710  
LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 4492  
ELEV.=82.18 FEET NAVD 88 (CORS96) BASED ON GEOID '09.

**HORIZONTAL DATUM:**  
ALL HORIZONTAL COORDINATES ARE BASED ON TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD 83, 1993 ADJUSTMENT.

THE COORDINATES & DISTANCES SHOWN ARE SURFACE UNLESS OTHERWISE NOTED, AND MAY BE CONVERTED TO GRID BY MULTIPLYING BY A SCALE FACTOR OF 0.999870017.

**LEGEND:**  
B-XX SURVEY CONTROL POINT NUMBER  
C-XX DESIGN BASELINE POINT NUMBER  
▲ SURVEY CONTROL POINT  
● DESIGN BASELINE POINT  
● CITY OF HOUSTON MONUMENT  
D. BL: DESIGN BASELINE  
S. BL: SURVEY BASELINE

**DESIGN BASELINE POINTS DATA**

POINT NO.	NORTHING (SURFACE)	EASTING (SURFACE)	NORTHING (GRID)	EASTING (GRID)	D. BL STA.	DESCRIPTION
C-1	13,850,816.74	3,059,863.88	13,849,016.37	3,059,466.14	1+00	SET 1/2" I.R. W/CAP
C-2	13,851,703.40	3,059,820.11	13,849,902.91	3,059,422.38	9+87.74	SET MAG NAIL W/SHNR
C-3	13,852,045.04	3,059,938.08	13,850,244.51	3,059,540.34	13+58.11	SET MAG NAIL W/SHNR
C-4	13,852,286.86	3,060,147.75	13,850,486.30	3,059,749.98	16+78.17	SET MAG NAIL W/SHNR
C-5	13,852,626.84	3,060,265.81	13,850,826.23	3,059,868.02	20+46.88	SET MAG NAIL W/SHNR
C-6	13,852,926.47	3,060,252.04	13,851,125.83	3,059,854.26	23+46.82/3+17.04	SET "X" CUT
C-7	13,853,633.85	3,060,219.55	13,851,833.11	3,059,821.77	30+54.95	SET MAG NAIL W/SHNR
C-8	13,854,341.23	3,060,187.06	13,852,540.40	3,059,789.28	37+63.07	SET "X" CUT
C-9	13,852,918.09	3,060,035.17	13,851,117.45	3,059,637.42	1+00	SET "X" CUT
C-10	13,852,933.53	3,060,434.87	13,851,132.88	3,060,037.06	5+00	SET "X" CUT
C-11	13,853,381.99	3,060,181.07	13,851,581.28	3,059,783.30	0+50	SET 1/2" I.R.
C-12	13,853,383.97	3,060,231.03	13,851,583.26	3,059,833.25	1+00	SET MAG NAIL W/SHNR
C-13	13,853,388.32	3,060,341.03	13,851,587.61	3,059,943.24	2+10.09	SET MAG NAIL W/SHNR
C-14	13,853,394.28	3,060,360.83	13,851,593.58	3,059,963.04	2+30.77	SET MAG NAIL W/SHNR
C-15	13,853,401.06	3,060,528.30	13,851,600.35	3,060,130.48	3+98.37	SET "X" CUT

MEMORIAL CITY  
REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

**KUO**  
& associates, Inc.  
Consulting Engineers & Surveyors  
10700 Richmond Ave., Suite 113, Houston, Texas 77042  
Tel: 713-975-8769, Fax: 713-975-8920, www.kuoassociates.com  
Texas Firm Registration No. P-4578

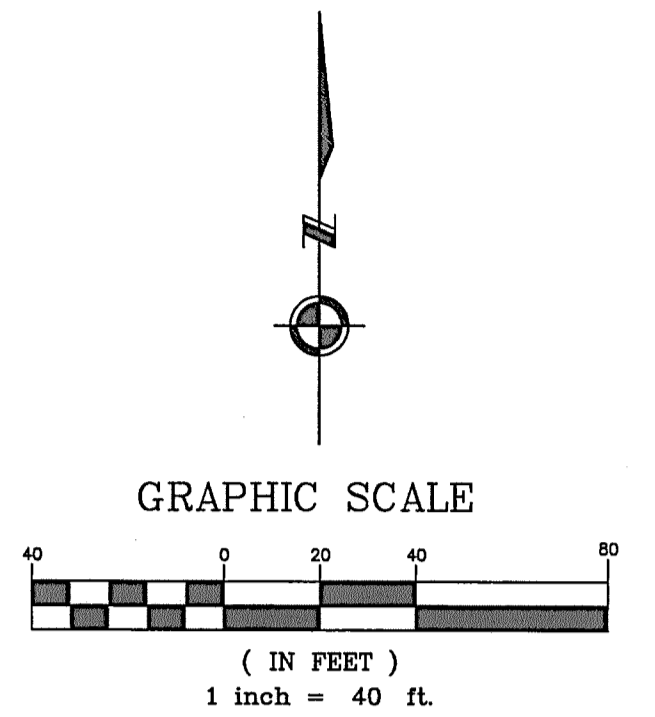
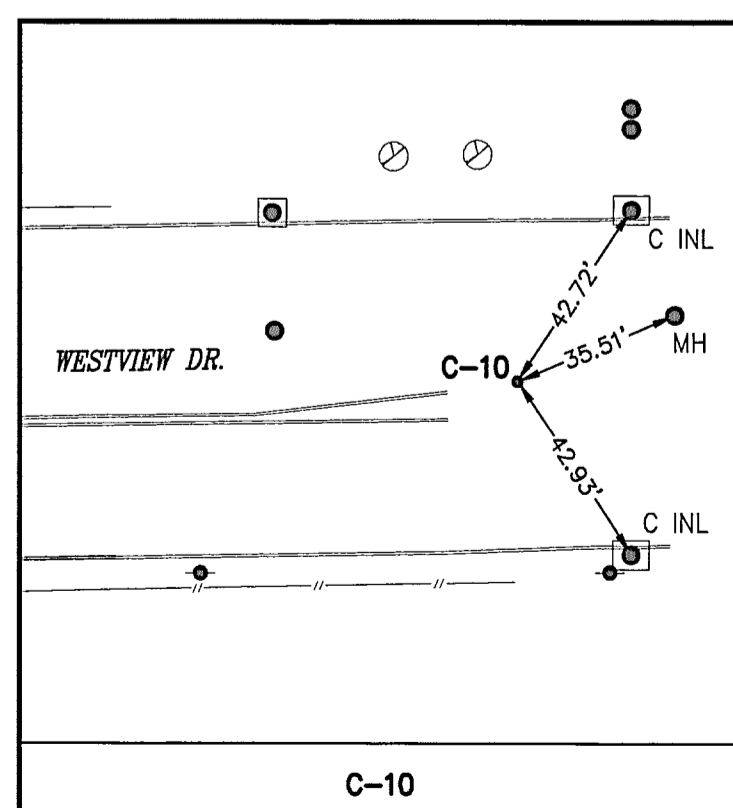
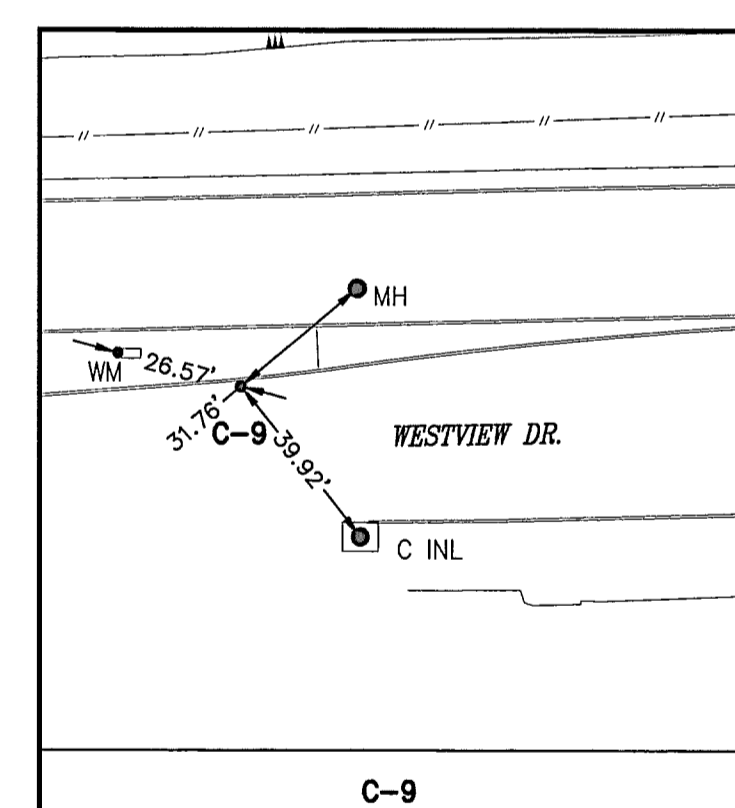
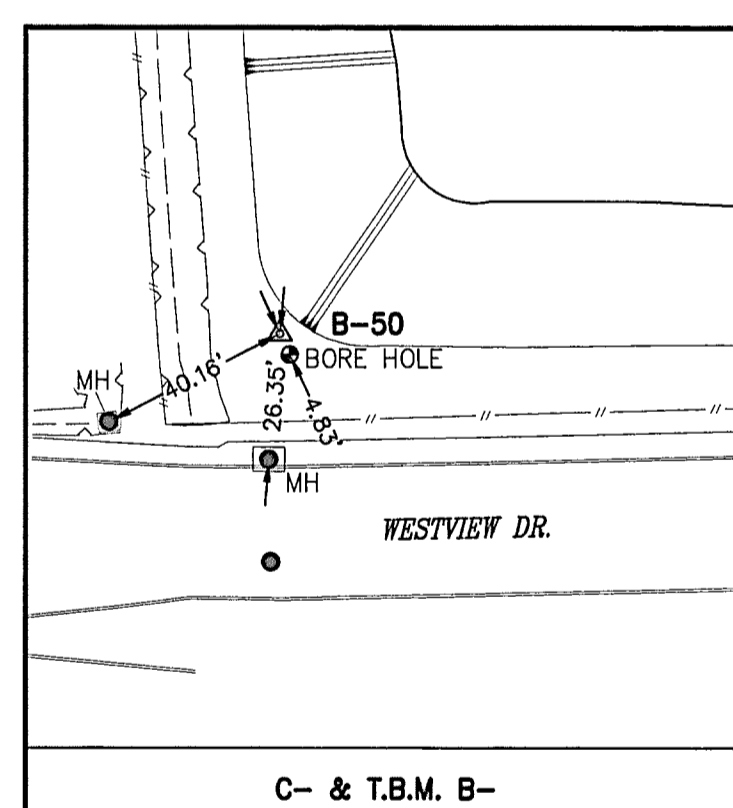
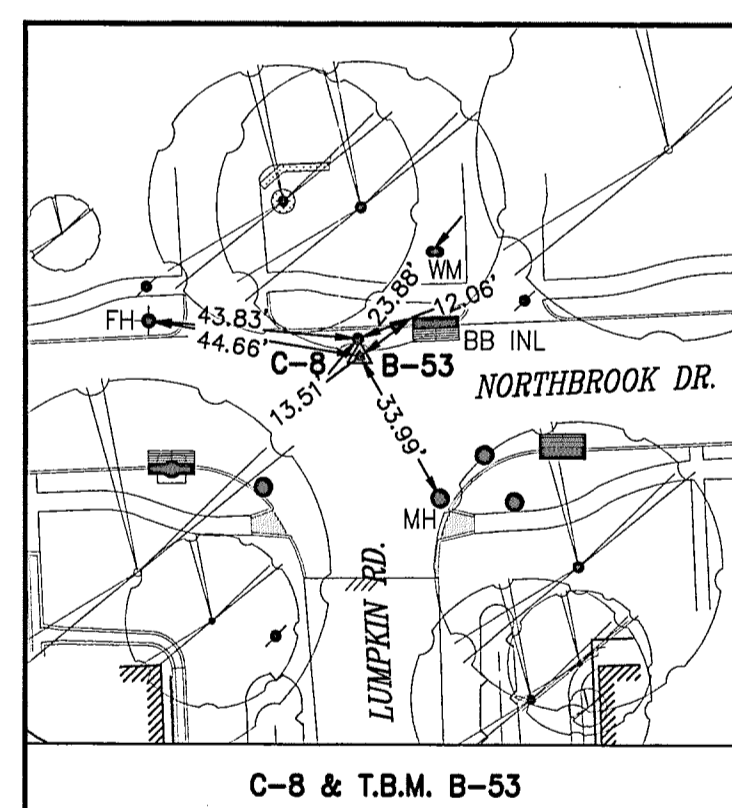
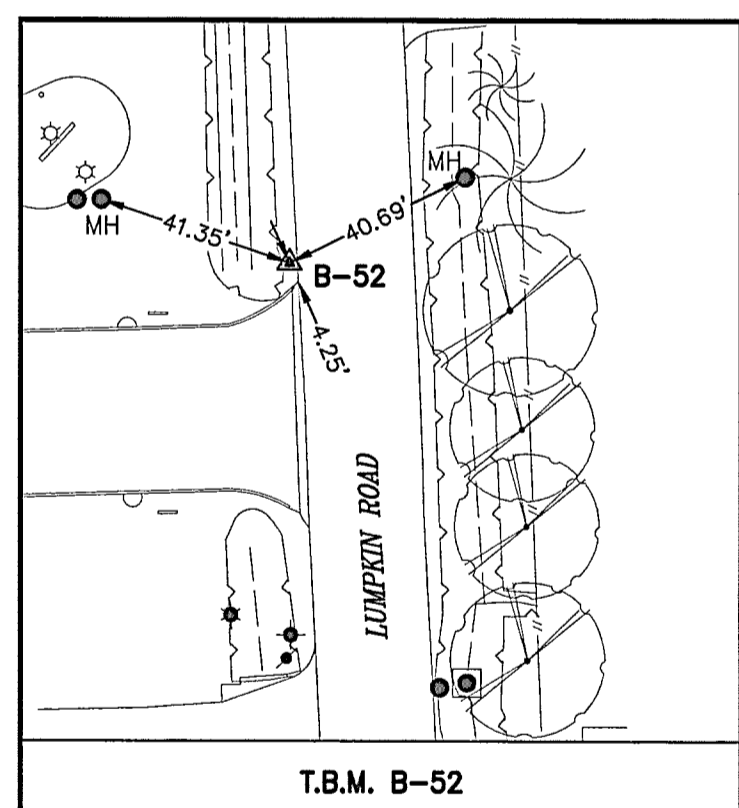
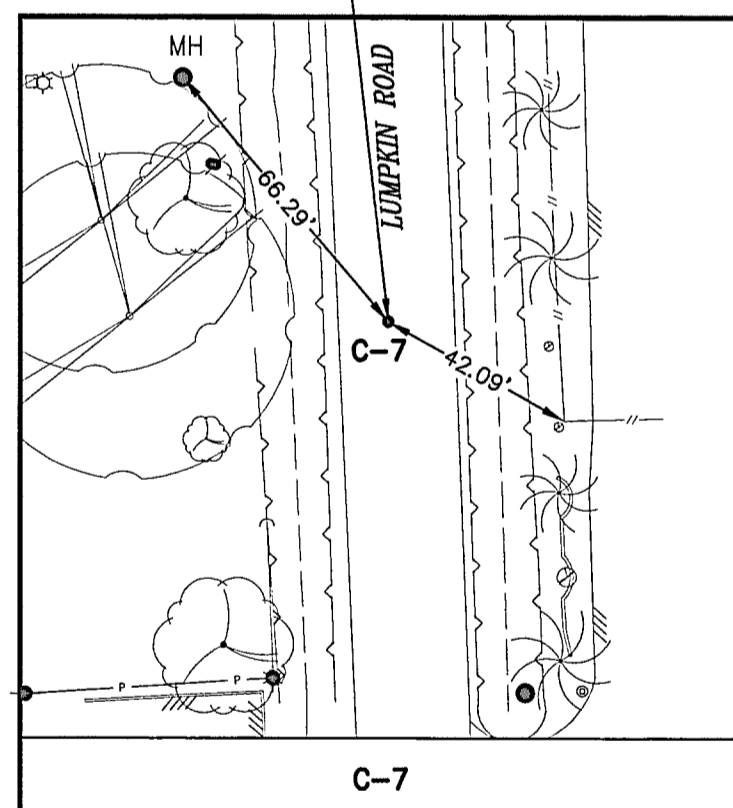
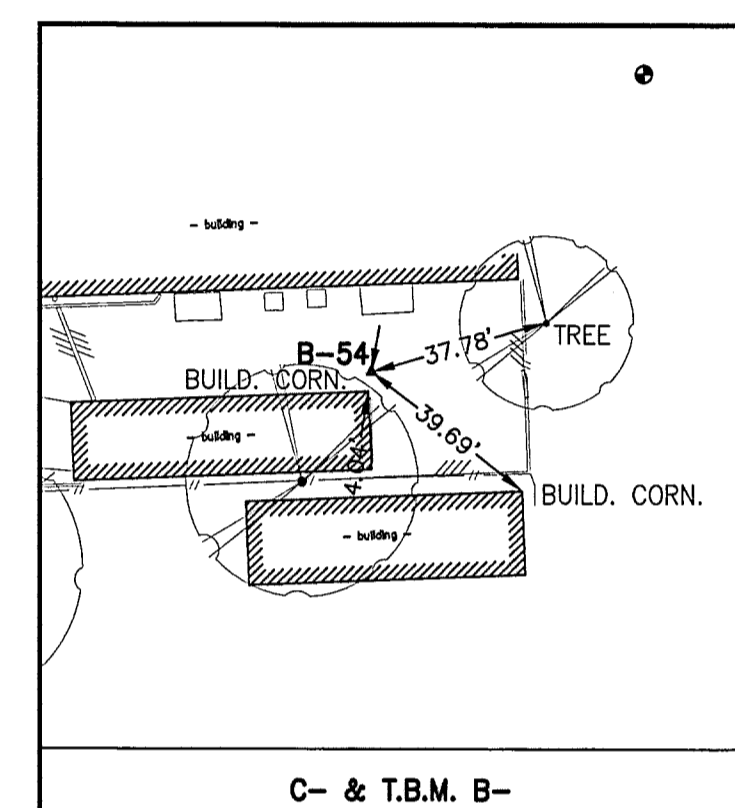
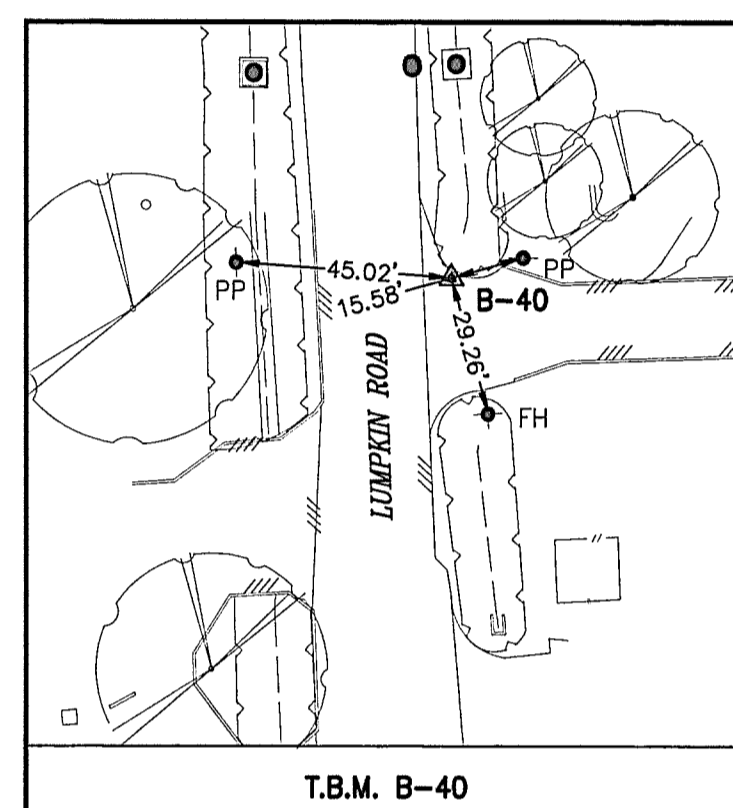
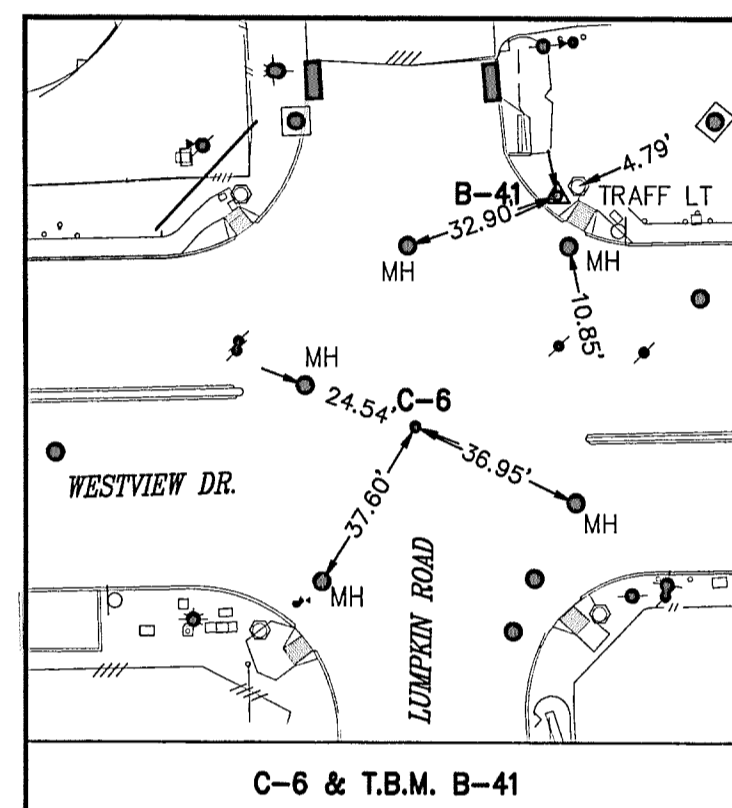
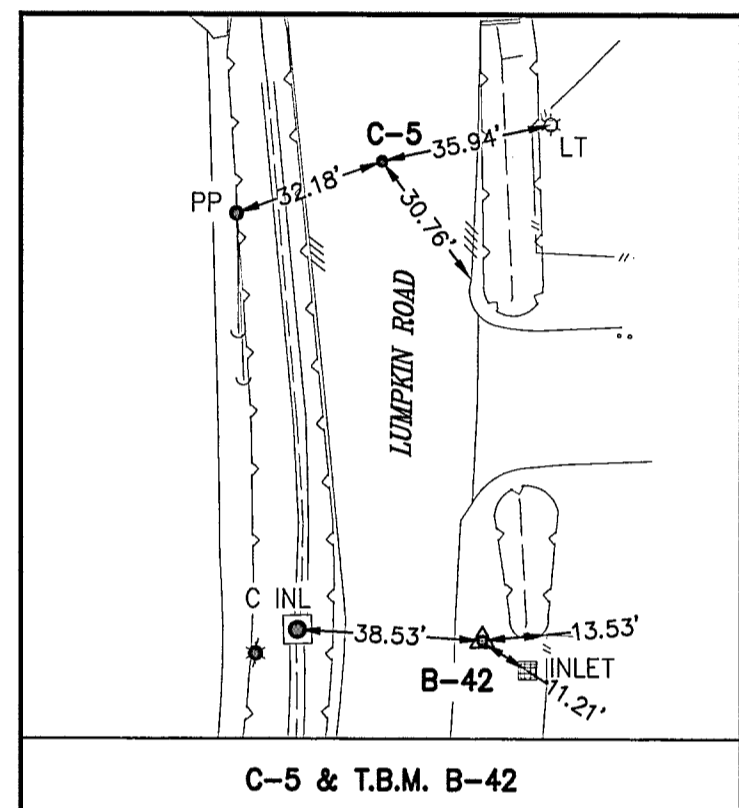
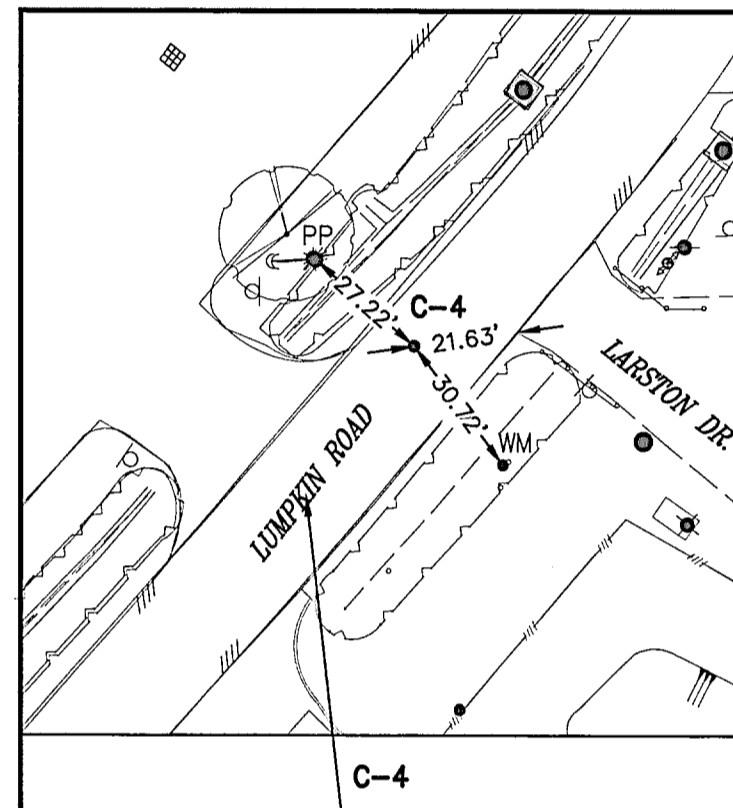
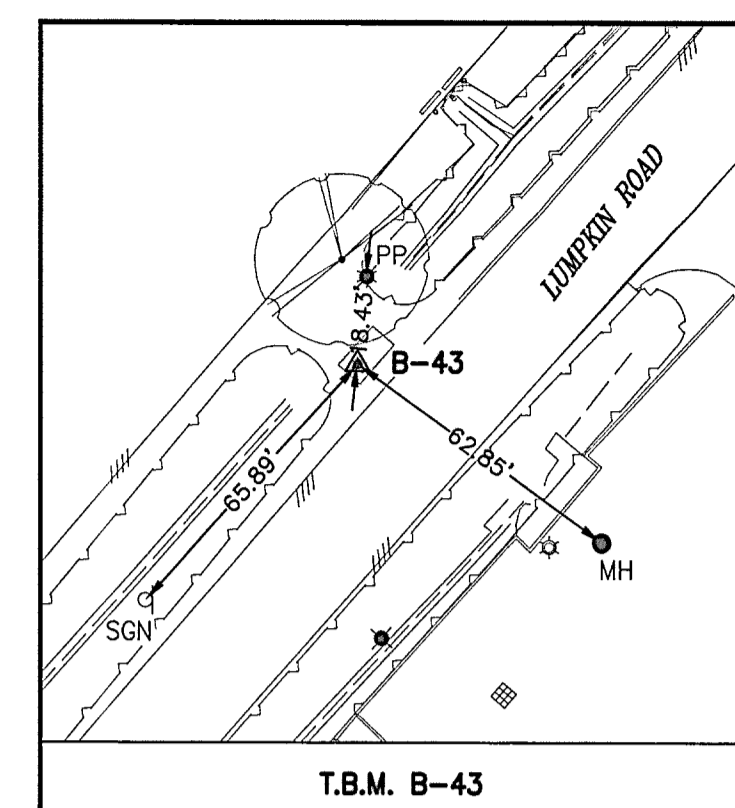
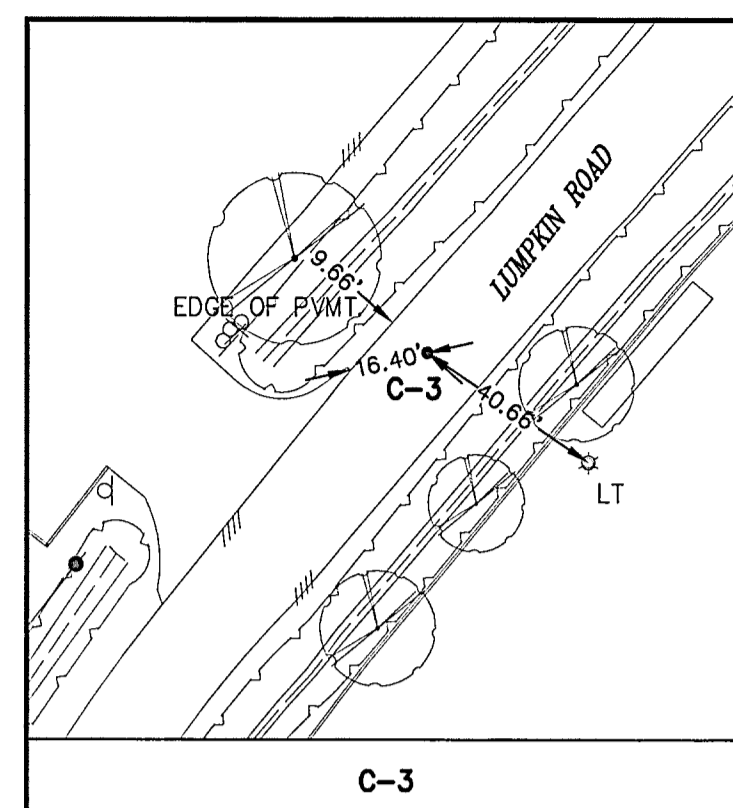
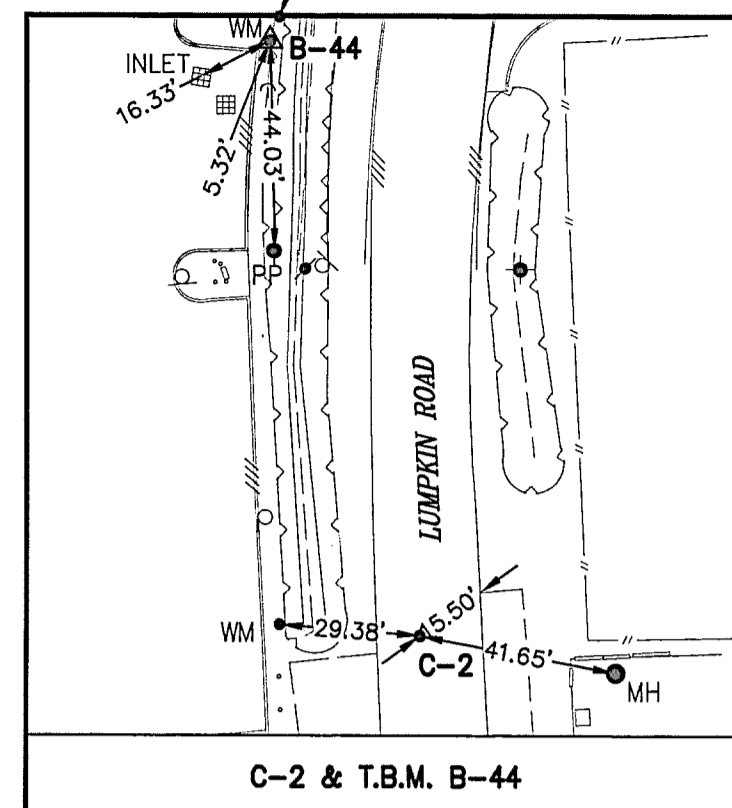
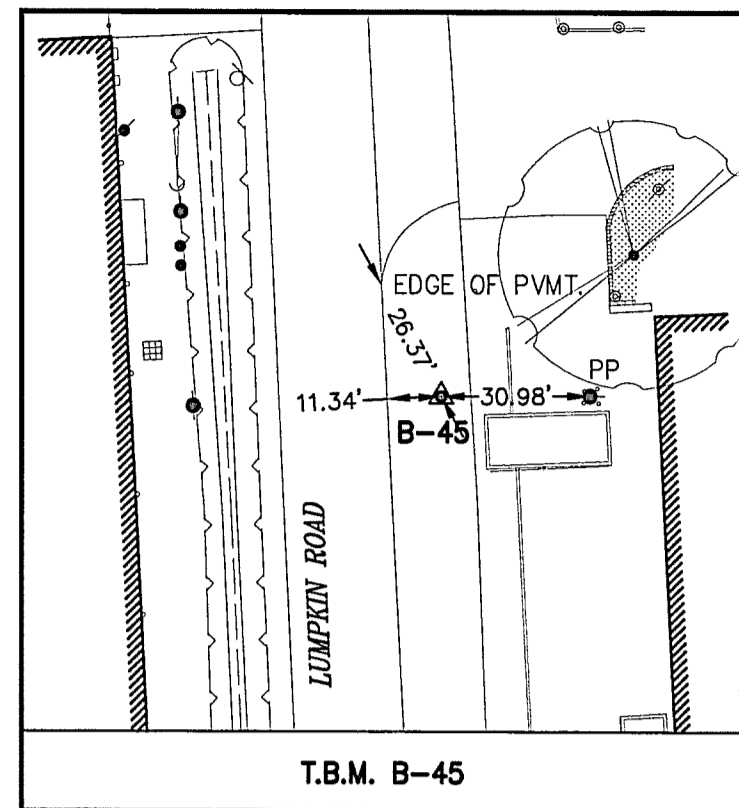
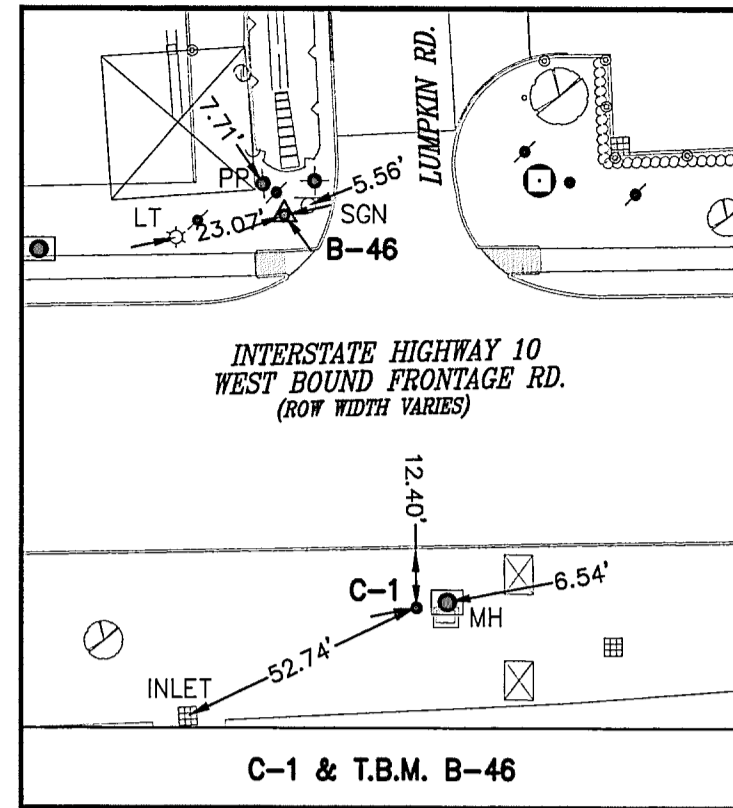
*Shaheen Chowdhury*  
07/29/14

SURVEYED BY:  
KUO & ASSOCIATES  
FB No. P-5857

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

**LUMPKIN ROAD**  
SURVEY CONTROL MAP  
SHEET 2 OF 2

WBS NO.	
N-T17000-0012-3	
DRAWING SCALE	
1" = 100'	
CITY OF HOUSTON PM	
SHEET NO. 9 OF 226	



- EXIST. TOPOGRAPHIC LEGEND**
- MANHOLE
  - GRATE INLET
  - ▣ B/BB INLET
  - ◆ FIRE HYDRANT
  - SIGNAL POLE
  - - - FENCE
  - BUSH
  - BORE HOLE
  - ◆ WATER VALVE
  - - - HIGH BANK
  - DESIGN BASELINE POINT
  - SURVEY CONTROL POINT
  - MAIL BOX
  - ☆ LIGHT
  - SIGN
  - POWER POLE
  - ◆ POWER POLE W/LIGHT
  - DOWN GUY
  - TREE
  - PLANTER
  - ▭ BUILDING
  - WATER METER
  - - - HEDGE ROW
  - METER POLE
  - HL&P MANHOLE

- ABBREVIATIONS**
- F.H. - FIRE HYDRANT
  - F.C - FENCE CORNER
  - LT - LIGHT POLE
  - MB - MAIL BOX
  - MH - MANHOLE
  - PP - POWER POLE
  - PP/LIGHT - POWER POLE W/LIGHT
  - WM - WATER METER

MEMORIAL CITY REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY

**KUO & associates, Inc.**  
 Consulting Engineers & Surveyors  
 10700 Richmond Ave., Suite 113, Houston, Texas 77042  
 Tel: 713-975-8169, Fax: 713-975-8220, www.kuoassociates.com  
 Texas Firm Registration No. F-4578



SURVEYED BY: KUO & ASSOCIATES  
 FB No. P-5857

Shaheen Chowdhury  
 07/21/14

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

LUMPKIN ROAD  
 CONTROL POINT SWING TIES

WBS NO.	
N-T17000-0012-3	
DRAWING SCALE	
1" = 40'	
CITY OF HOUSTON PM	
SHEET NO. 10 OF 226	

# PROPOSED LUMPKIN ALIGNMENT

## BL LUMPKIN ROAD

Beginning chain PR-HALN description

Point 510                    N    13,850,816.743 E    3,059,863.875 Sta    1+00.00

Course from 510 to PC PR-HALN-1 N 2° 49' 33.88" W Dist 887.741

Curve Data  
\*-----\*

Curve PR-HALN-1  
 P.I. Station            11+82.48 N    13,851,897.909 E    3,059,810.504  
 Delta                =    43° 45' 13.00" (RT)  
 Degree               =    11° 48' 48.74"  
 Tangent              =    194.741  
 Length               =    370.368  
 Radius                =    485.001  
 External             =    37.637  
 Long Chord          =    361.435  
 Mid. Ord.            =    34.926  
 P.C. Station          9+87.74 N    13,851,703.405 E    3,059,820.105  
 P.T. Station          13+58.11 N    13,852,045.044 E    3,059,938.079  
 C.C.                    N    13,851,727.318 E    3,060,304.516  
 Back                 = N 2° 49' 33.88" W  
 Ahead                = N 40° 55' 39.12" E  
 Chord Bear          = N 19° 03' 02.62" E

Course from PT PR-HALN-1 to PC PR-HALN-2 N 40° 55' 39.12" E Dist 320.060

Curve Data  
\*-----\*

Curve PR-HALN-2  
 P.I. Station            18+71.95 N    13,852,433.268 E    3,060,274.697  
 Delta                =    43° 33' 27.00" (LT)  
 Degree               =    11° 48' 48.74"  
 Tangent              =    193.778  
 Length               =    368.708  
 Radius                =    485.001  
 External             =    37.278  
 Long Chord          =    359.893  
 Mid. Ord.            =    34.618  
 P.C. Station          16+78.17 N    13,852,286.861 E    3,060,147.752  
 P.T. Station          20+46.88 N    13,852,626.842 E    3,060,265.805  
 C.C.                    N    13,852,604.588 E    3,059,781.315  
 Back                 = N 40° 55' 39.12" E  
 Ahead                = N 2° 37' 47.88" W  
 Chord Bear          = N 19° 08' 55.62" E

Course from PT PR-HALN-2 to 511 N 2° 37' 47.88" W Dist 1,716.191

Point 511                    N    13,854,341.225 E    3,060,187.057 Sta    37+63.07

Ending chain PR-HALN description

## BL WESTVIEW DRIVE

Chain PR-WV-HALN contains:  
200 201 202

Beginning chain PR-WV-HALN description

Point 200                    N    13,852,916.06 E    3,059,934.93 Sta    0+00.00

Course from 200 to 201 N 88° 08' 57.284" E Dist 317.28

Point 201                    N    13,852,926.31 E    3,060,252.05 Sta    3+17.28

Course from 201 to 202 N 88° 08' 57.285" E Dist 282.74

Point 202                    N    13,852,935.44 E    3,060,534.64 Sta    6+00.02

Ending chain PR-WV-HALN description

## BL WESTVIEW BASIN

Beginning chain PR-PD-HALN2 description

Point 1153                    N    13,852,988.548 E    3,060,349.295 Sta    0+00.00

Course from 1153 to 1154 S 88° 37' 36.12" W Dist 414.921

Point 1154                    N    13,852,978.604 E    3,059,934.493 Sta    4+14.92

Course from 1154 to 1155 S 88° 37' 36.12" W Dist 485.081

Point 1155                    N    13,852,966.978 E    3,059,449.552 Sta    9+00.00

Ending chain PR-PD-HALN2 description

## BL BASIN CHANNEL

Beginning chain CHANNEL description

Point 400                    N    13,853,037.904 E    3,060,246.923 Sta    0+00.00

Course from 400 to PC CHANNEL-1 S 87° 47' 38.21" W Dist 414.026

Curve Data  
\*-----\*

Curve CHANNEL-1  
 P.I. Station            4+17.58 N    13,853,021.810 E    3,059,829.649  
 Delta                =    16° 50' 35.93" (RT)  
 Degree               =    238° 22' 11.37"  
 Tangent              =    3.559  
 Length               =    7.066  
 Radius                =    24.037  
 External             =    0.262  
 Long Chord          =    7.041  
 Mid. Ord.            =    0.259  
 P.C. Station          4+14.03 N    13,853,021.967 E    3,059,833.204  
 P.T. Station          4+21.09 N    13,853,022.689 E    3,059,826.201  
 C.C.                    N    13,853,045.980 E    3,059,832.142  
 Back                 = S 87° 28' 01.76" W  
 Ahead                = N 75° 41' 22.31" W  
 Chord Bear          = N 84° 06' 40.27" W

Course from PT CHANNEL-1 to PC CHANNEL-2 N 69° 59' 49.60" W Dist 235.329

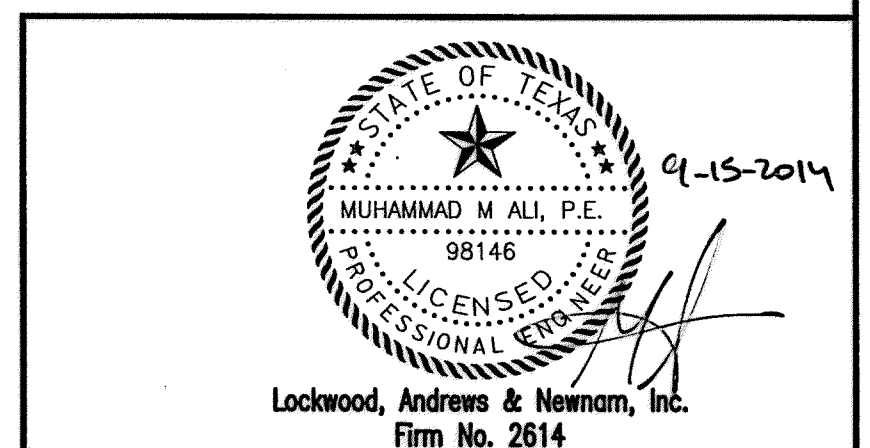
Curve Data  
\*-----\*

Curve CHANNEL-2  
 P.I. Station            6+63.31 N    13,853,105.544 E    3,059,598.594  
 Delta                =    22° 16' 16.83" (RT)  
 Degree               =    163° 42' 08.02"  
 Tangent              =    6.889  
 Length               =    13.605  
 Radius                =    35.000  
 External             =    0.672  
 Long Chord          =    13.519  
 Mid. Ord.            =    0.659  
 P.C. Station          6+56.42 N    13,853,103.188 E    3,059,605.068  
 P.T. Station          6+70.03 N    13,853,110.179 E    3,059,593.496  
 C.C.                    N    13,853,136.076 E    3,059,617.040  
 Back                 = N 69° 59' 49.60" W  
 Ahead                = N 47° 43' 32.77" W  
 Chord Bear          = N 58° 51' 41.18" W

Course from PT CHANNEL-2 to 401 N 47° 05' 39.94" W Dist 187.657

Point 401                    N    13,853,237.934 E    3,059,456.042 Sta    8+57.68

Ending chain CHANNEL description



MEMORIAL CITY  
REDEVELOPMENT AUTHORITY

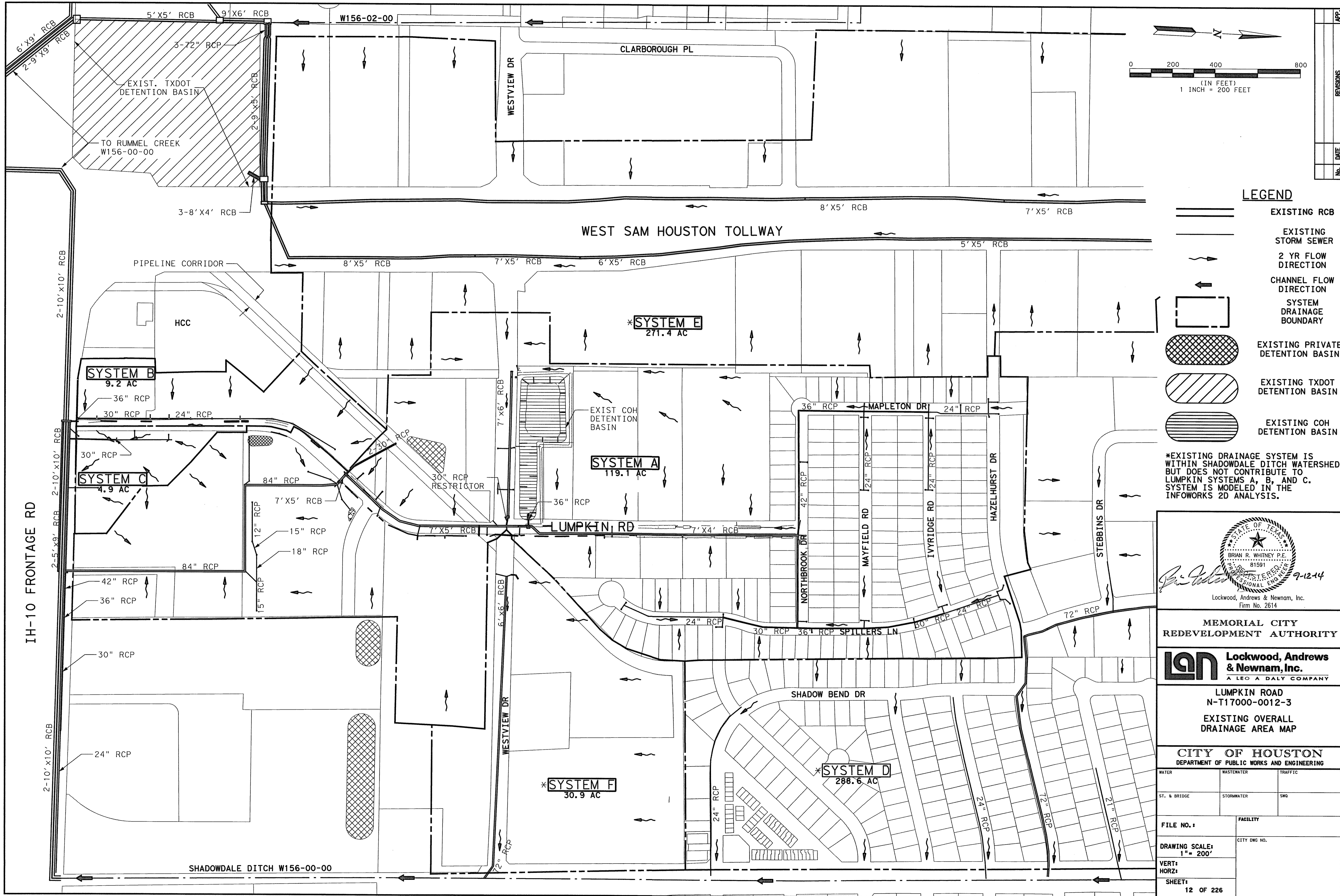


LUMPKIN ROAD  
N-T17000-0012-3  
HORIZONTAL ALIGNMENT DATA

SHEET 1 OF 1  
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG. NO.
NOT TO SCALE		
SHEET: 11 OF 226		

9/2/2014 8:29:34 AM M:\dwh\l\adec\int\project\wise\Documents\Projects\130-10384-001\4-D-Production\4-D1-Drawings\General\11-001-HOR-ALIGN-01.dgn



**LEGEND**

- EXISTING RCB
- EXISTING STORM SEWER
- 2 YR FLOW DIRECTION
- CHANNEL FLOW DIRECTION
- SYSTEM DRAINAGE BOUNDARY
- EXISTING PRIVATE DETENTION BASIN
- EXISTING TXDOT DETENTION BASIN
- EXISTING COH DETENTION BASIN

\*EXISTING DRAINAGE SYSTEM IS WITHIN SHADOWDALE DITCH WATERSHED BUT DOES NOT CONTRIBUTE TO LUMPKIN SYSTEMS A, B, AND C. SYSTEM IS MODELED IN THE INFOWORKS 2D ANALYSIS.

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

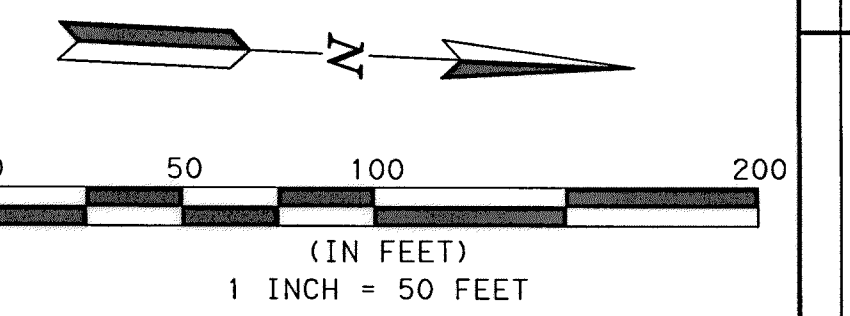
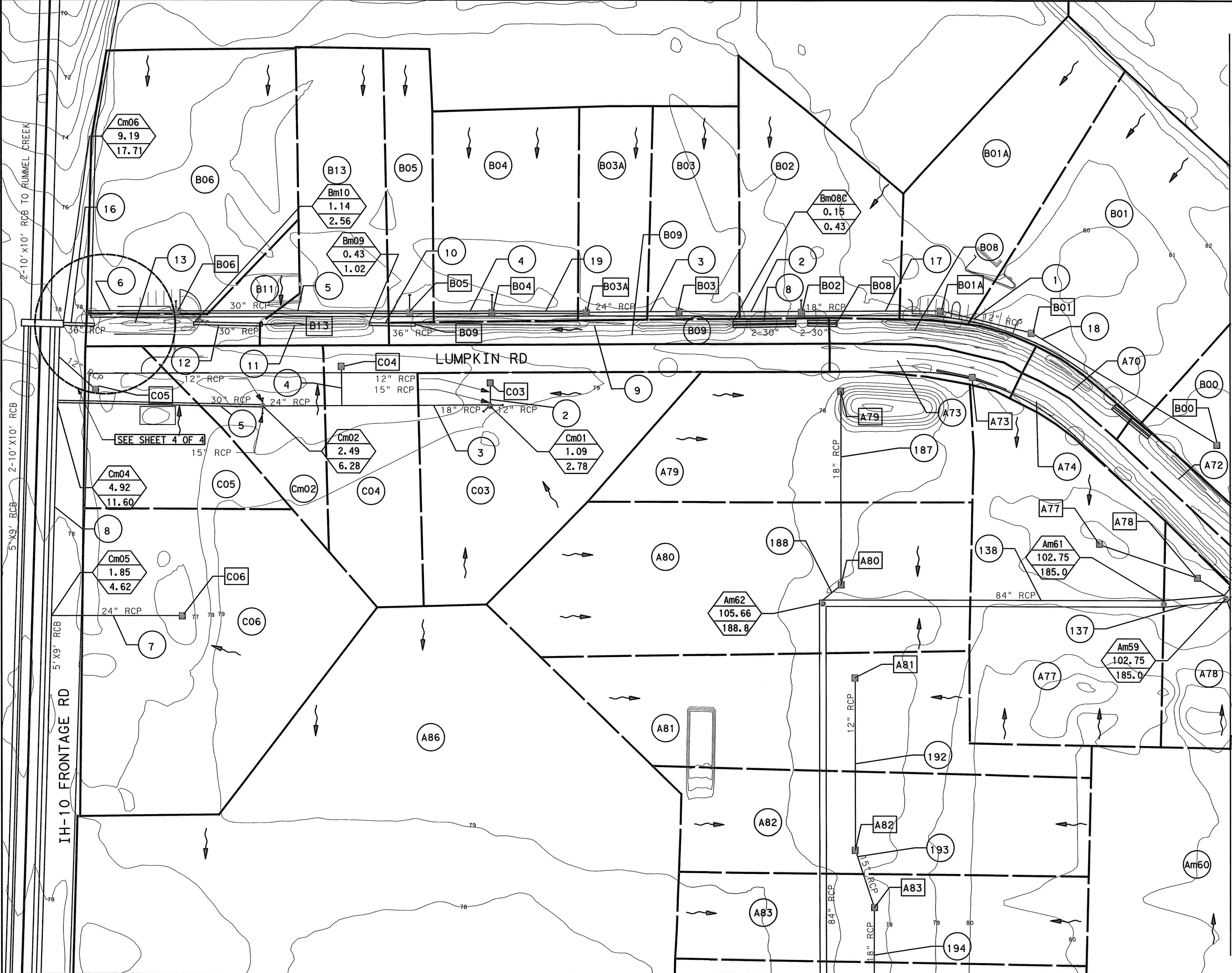
**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEQ A DALY COMPANY

**LUMPKIN ROAD N-T17000-0012-3**  
EXISTING OVERALL DRAINAGE AREA MAP

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC	FACILITY
ST. & BRIDGE	STORMWATER	SWG	CITY DWG NO.
FILE NO.:			DRAINAGE
DRAWING SCALE: 1" = 200'			CITY DWG NO.
VERT: /			PROJECT NO.
HORZ: /			
SHEET: 12 OF 226			

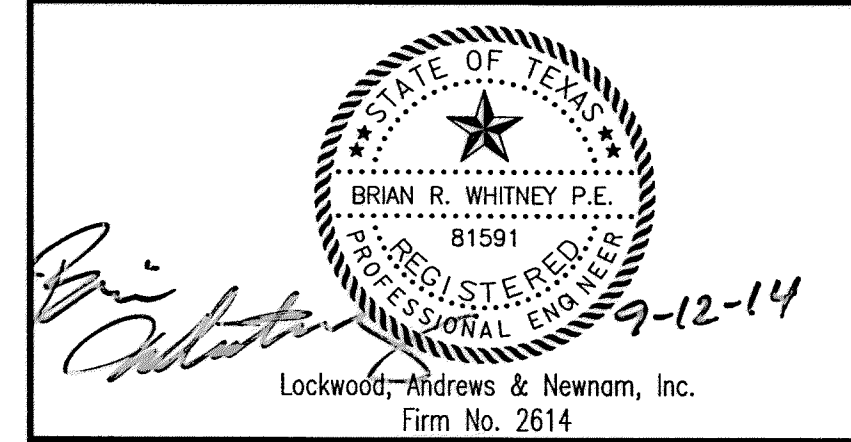


- NOTES:
1. CONTOURS SHOWN FROM 2008 LIDAR FOR INFORMATION PURPOSES ONLY.
  2. CONTOURS ARE ON NAVD88 DATUM.

**LEGEND**

Symbol	Description
	MH# AREA FLOW
	MANHOLE NUMBER
	TOTAL CUMULATIVE AREA (AC)
	2-YR Q (CFS)
	DRAINAGE AREA
	INLET ID
	HOUSTORM RUN NO.
	EXISTING RCB
	EXISTING STORM SEWER
	2 YR FLOW DIRECTION
	INLET MANHOLE
	SYSTEM DRAINAGE BOUNDARY
	DRAINAGE AREA

MATCHLINE SEE SHEET 2 OF 4



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**



**LUMPKIN ROAD**  
 N-T17000-0012-3  
 EXISTING DRAINAGE AREA MAP (1 OF 4)

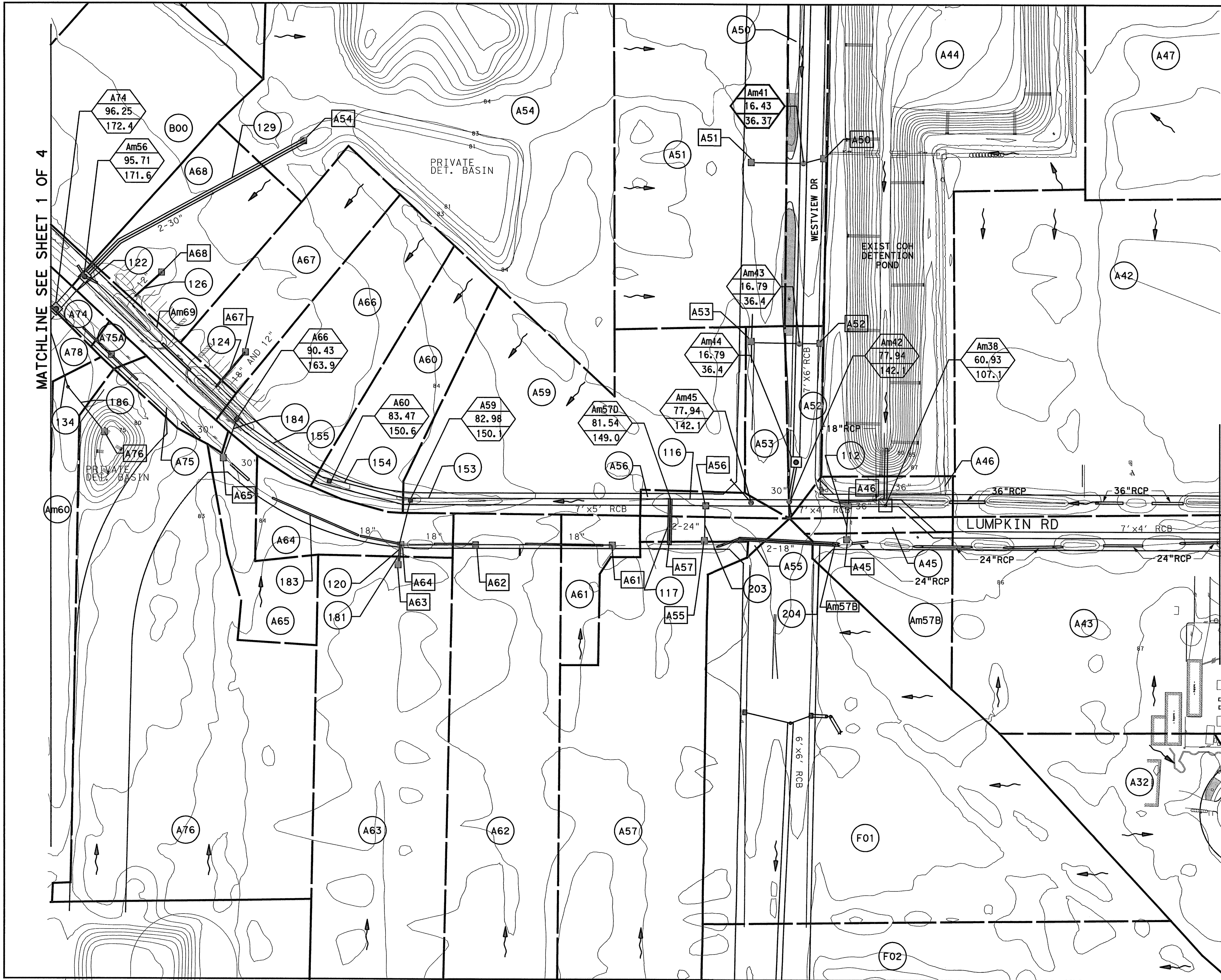
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE: 1"=50'	CITY DWG NO.	
VERT:		
HORZ:		
SHEET:	13 OF 226	

APP. REVISIONS No. DATE No. DATE No. DATE No. DATE

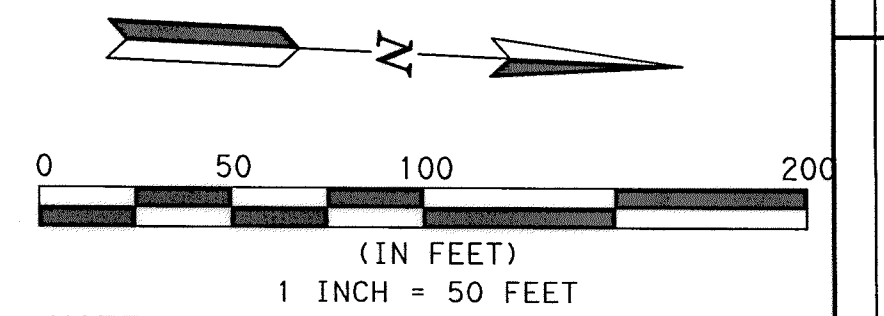
10-17-08 AM 10-17-08 AM 10-17-08 AM 10-17-08 AM

pww\l\adpw\_ladoc\_int\proj\wise\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\Drainage\13-001-PR-EX-DRW-AREA-MAP (1 OF 4)-A801-1e



MATCHLINE SEE SHEET 1 OF 4

MATCHLINE SEE SHEET 3 OF 4



- NOTES:
1. CONTOURS SHOWN FROM 2008 LIDAR FOR INFORMATION PURPOSES ONLY.
  2. CONTOURS ARE ON NAVD88 DATUM.

LEGEND	
	MANHOLE NUMBER TOTAL CUMULATIVE AREA (AC) 2-YR Q (CFS)
	DRAINAGE AREA
	INLET ID
	HOUSTORM RUN NO.
	EXISTING RCB
	EXISTING STORM SEWER
	2 YR FLOW DIRECTION
	INLET
	MANHOLE
	SYSTEM DRAINAGE BOUNDARY
	DRAINAGE AREA

9-12-14

Brian R. Whitney  
Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

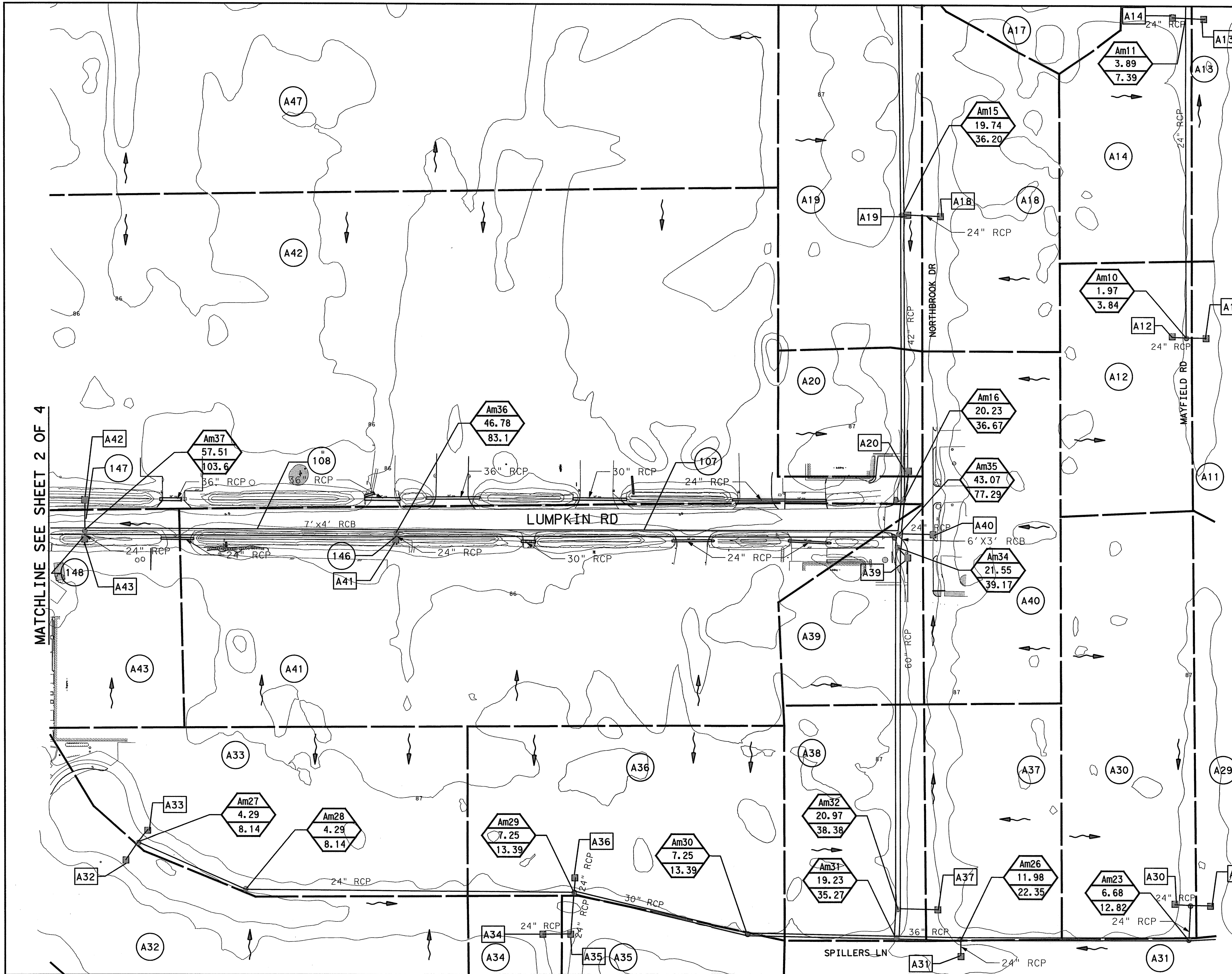
**LAN Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
EXISTING DRAINAGE AREA MAP (2 OF 4)

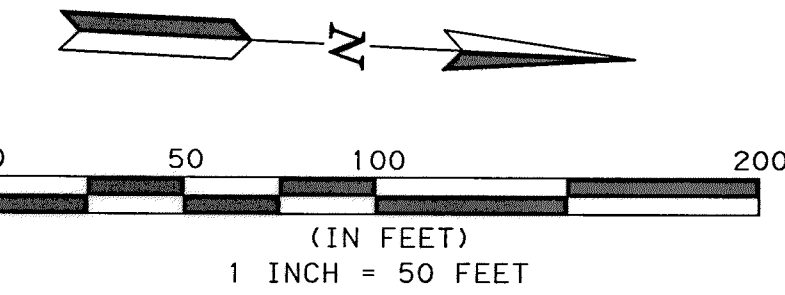
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE: 1"=50'	CITY DWG NO.	
VERT:		
HORZ:		
SHEET: 14 OF 226		

APP: REVISIONS: No. DATE: 10/17/13 AM 10:17:53 AM 101-17000-0012-3-DRN-AREA-MAP (2 OF 4) 14-001-PR-EX-DRN-AREA-MAP (2 OF 4) 14-001-PR-EX-DRN-AREA-MAP (2 OF 4) 14-001-PR-EX-DRN-AREA-MAP (2 OF 4)



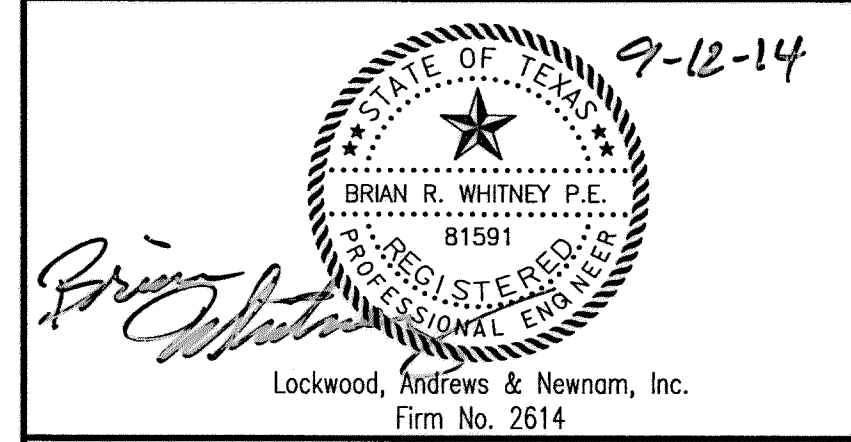
MATCHLINE SEE SHEET 2 OF 4



- NOTES:
1. CONTOURS SHOWN FROM 2008 LIDAR FOR INFORMATION PURPOSES ONLY.
  2. CONTOURS ARE ON NAVD88 DATUM.

**LEGEND**

MH#	AREA	FLOW	MANHOLE NUMBER	TOTAL CUMULATIVE AREA (AC)	2-YR Q (CFS)
B--					DRAINAGE AREA
B--					INLET ID
X					HOUSTORM RUN NO.
---					EXISTING RCB
---					EXISTING STORM SEWER
→					2 YR FLOW DIRECTION
■					INLET
●					MANHOLE
---					SYSTEM DRAINAGE BOUNDARY
---					DRAINAGE AREA



MEMORIAL CITY REDEVELOPMENT AUTHORITY

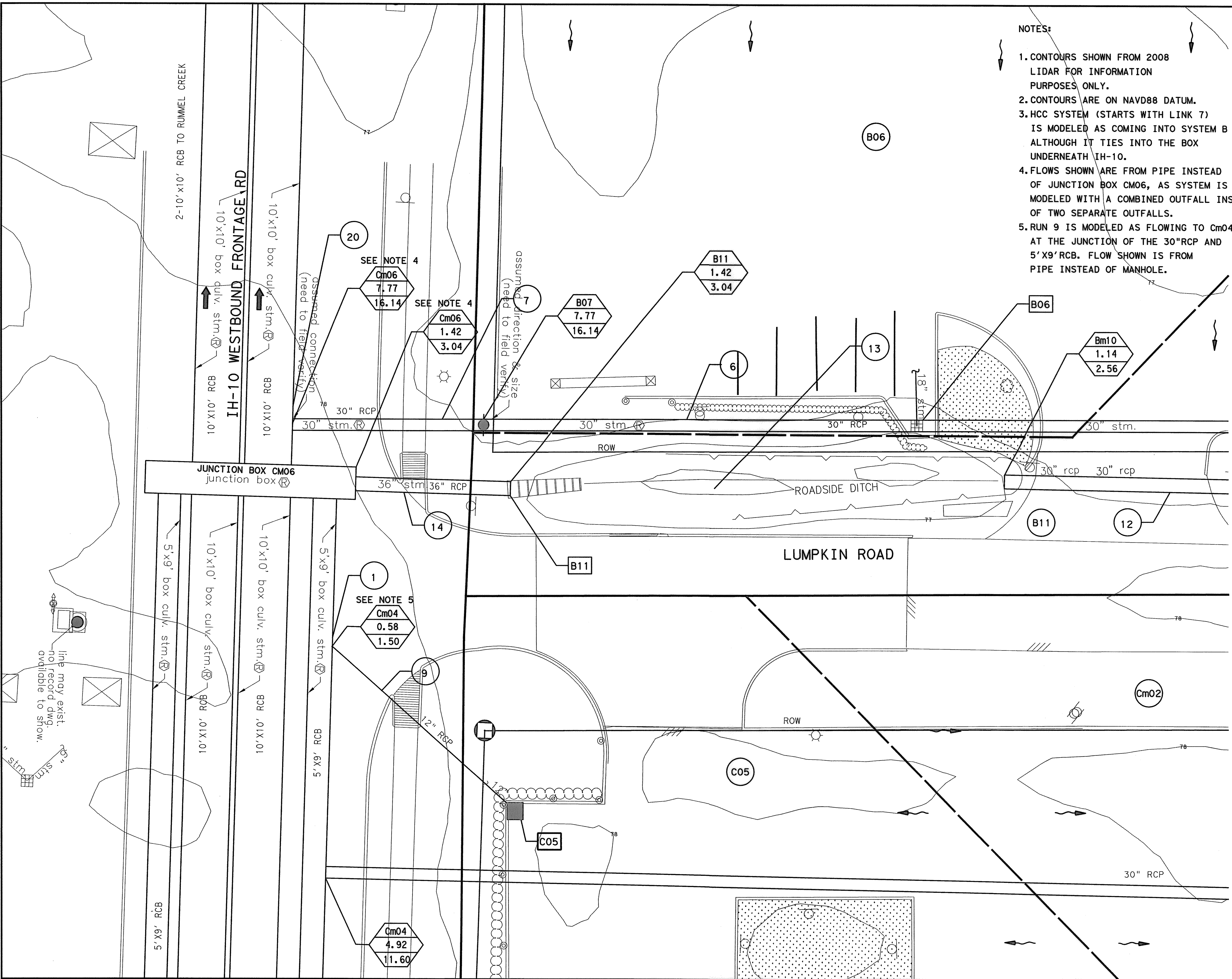


LUMPKIN ROAD  
N-T17000-0012-3  
EXISTING DRAINAGE AREA MAP (3 OF 4)

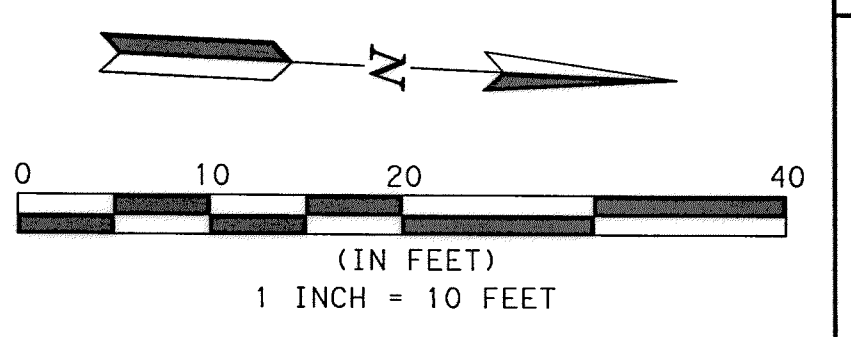
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE: 1"=50'	CITY DNG NO.	
VERT:		
HORZ:		
SHEET:	15 OF 226	

APP. REVISIONS No. DATE 10:18:07 AM 03:05:49\jldm\4-01-Drawings\Drawings\130-10384-001\3-0-Production\4-01-Drawings\AREA-MAP (3 OF 4).dgn



- NOTES:
1. CONTOURS SHOWN FROM 2008 LIDAR FOR INFORMATION PURPOSES ONLY.
  2. CONTOURS ARE ON NAVD88 DATUM.
  3. HCC SYSTEM (STARTS WITH LINK 7) IS MODELED AS COMING INTO SYSTEM B ALTHOUGH IT TIES INTO THE BOX UNDERNEATH IH-10.
  4. FLOWS SHOWN ARE FROM PIPE INSTEAD OF JUNCTION BOX CM06, AS SYSTEM IS MODELED WITH A COMBINED OUTFALL INSTEAD OF TWO SEPARATE OUTFALLS.
  5. RUN 9 IS MODELED AS FLOWING TO Cm04 AT THE JUNCTION OF THE 30"RCP AND 5'X9'RCB. FLOW SHOWN IS FROM PIPE INSTEAD OF MANHOLE.



**LEGEND**

MH#	AREA	FLOW	MANHOLE NUMBER	TOTAL CUMULATIVE AREA (AC)	2-YR Q (CFS)
(B--)					DRAINAGE AREA
(B--)					INLET ID
(X)					HOUSTORM RUN NO.
==					EXISTING RCB
- - -					EXISTING STORM SEWER
→					2 YR FLOW DIRECTION
■					INLET
●					MANHOLE
□					SYSTEM DRAINAGE BOUNDARY
□					DRAINAGE AREA

9-12-14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

MEMORIAL CITY  
REDEVELOPMENT AUTHORITY

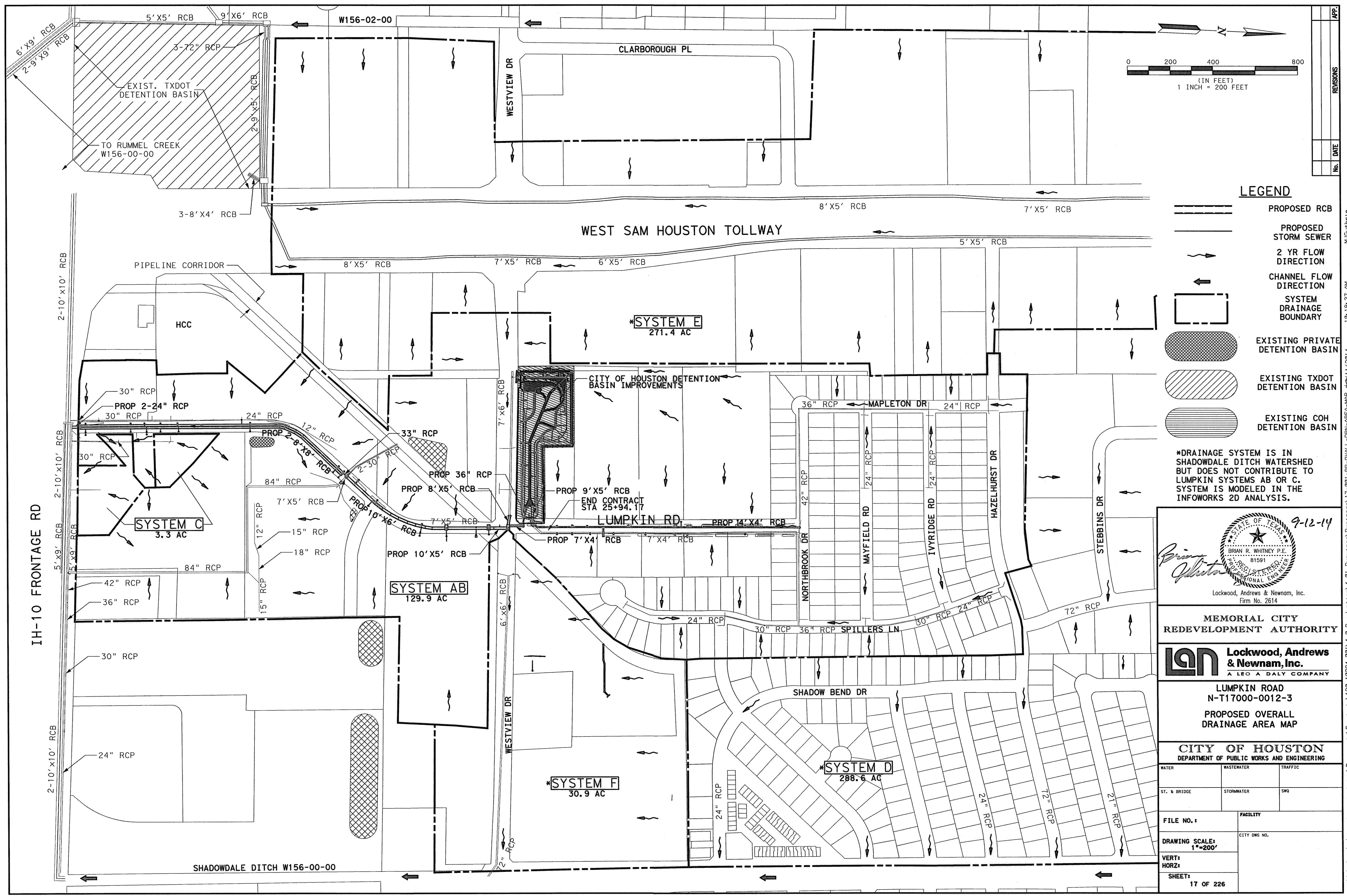
**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
EXISTING DRAINAGE  
AREA MAP (4 OF 4)

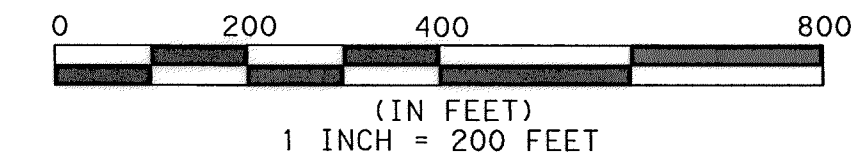
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:		FACILITY
DRAWING SCALE: 1"=10'		CITY DWG NO.
VERT:		
HORZ:		
SHEET:	16 OF 226	





NO.	DATE	REVISIONS



**LEGEND**

- PROPOSED RCB
- PROPOSED STORM SEWER
- 2 YR FLOW DIRECTION
- CHANNEL FLOW DIRECTION
- SYSTEM DRAINAGE BOUNDARY
- EXISTING PRIVATE DETENTION BASIN
- EXISTING TXDOT DETENTION BASIN
- EXISTING COH DETENTION BASIN

\*DRAINAGE SYSTEM IS IN SHADOWDALE DITCH WATERSHED BUT DOES NOT CONTRIBUTE TO LUMPKIN SYSTEMS AB OR C. SYSTEM IS MODELED IN THE INFOWORKS 2D ANALYSIS.

9-12-14

Brian R. Whitney, P.E.  
81591  
REGISTERED PROFESSIONAL ENGINEER

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

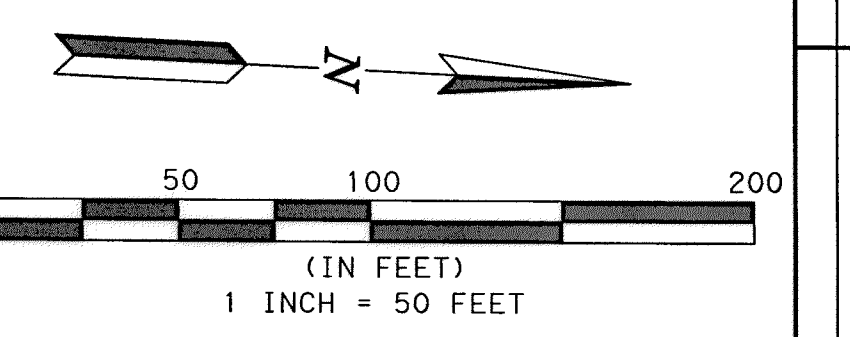
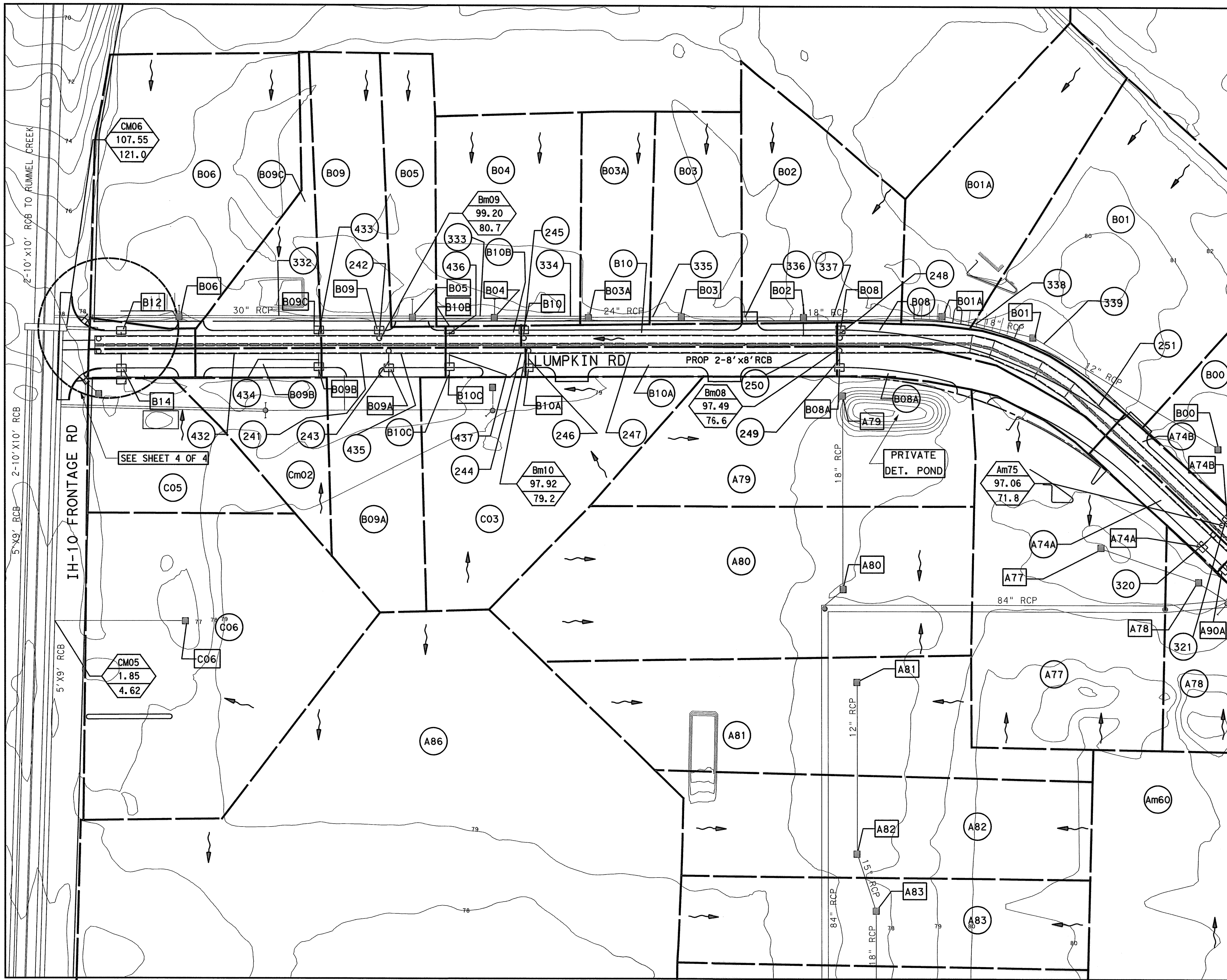
**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
PROPOSED OVERALL DRAINAGE AREA MAP

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO. 1	FACILITY	
DRAWING SCALE: 1"=200'	CITY DWG NO.	
VERT:		
HORZ:		
SHEET: 17 OF 226		

M:\edpw\edco\intproj\wise\Documents\Projects\130-10384-001\4-0-Products\17-001-PR-OVALL-DRN-AREA-MAP.dwg 11/2014 10:18:37 AM M:\edpw\edco\intproj\wise\Documents\Projects\130-10384-001\4-0-Products\17-001-PR-OVALL-DRN-AREA-MAP.dwg 11/2014

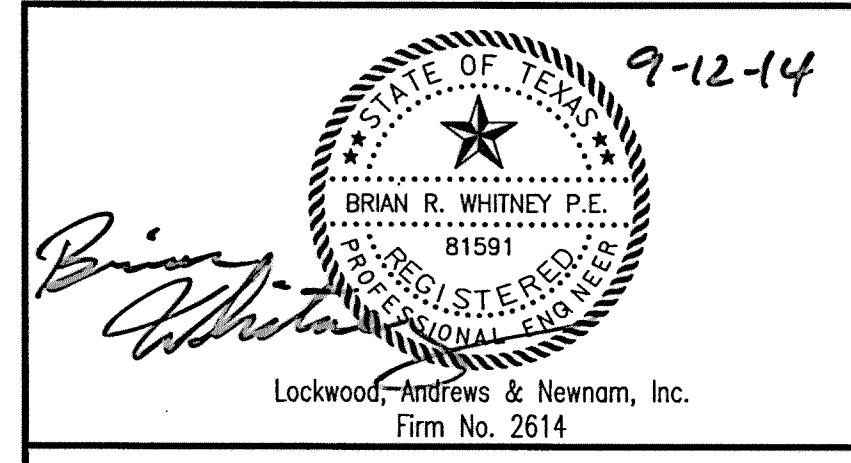


- NOTES:
1. CONTOURS SHOWN FROM 2008 LIDAR FOR INFORMATION PURPOSES ONLY.
  2. CONTOURS ARE ON NAVD88 DATUM.

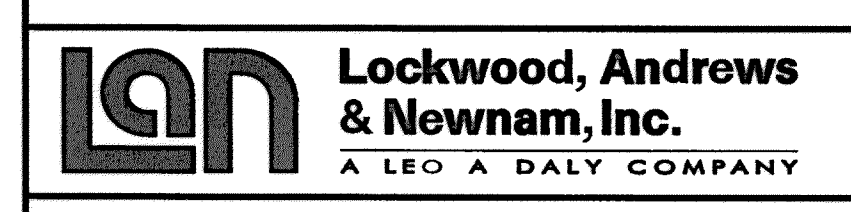
**LEGEND**

	MH#	MANHOLE NUMBER
	AREA	TOTAL CUMULATIVE AREA (AC)
	FLOW	2-YR Q (CFS)
	B--	DRAINAGE AREA
	B--	INLET ID
	X	HOUSTORM RUN NO.
		PROPOSED RCB
		PROPOSED STORM SEWER
		2 YR FLOW DIRECTION
		PROP INLET
		EXIST INLET
		PROP MANHOLE
		DRAINAGE AREA

MATCHLINE LINE SEE SHEET 2 OF 4



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

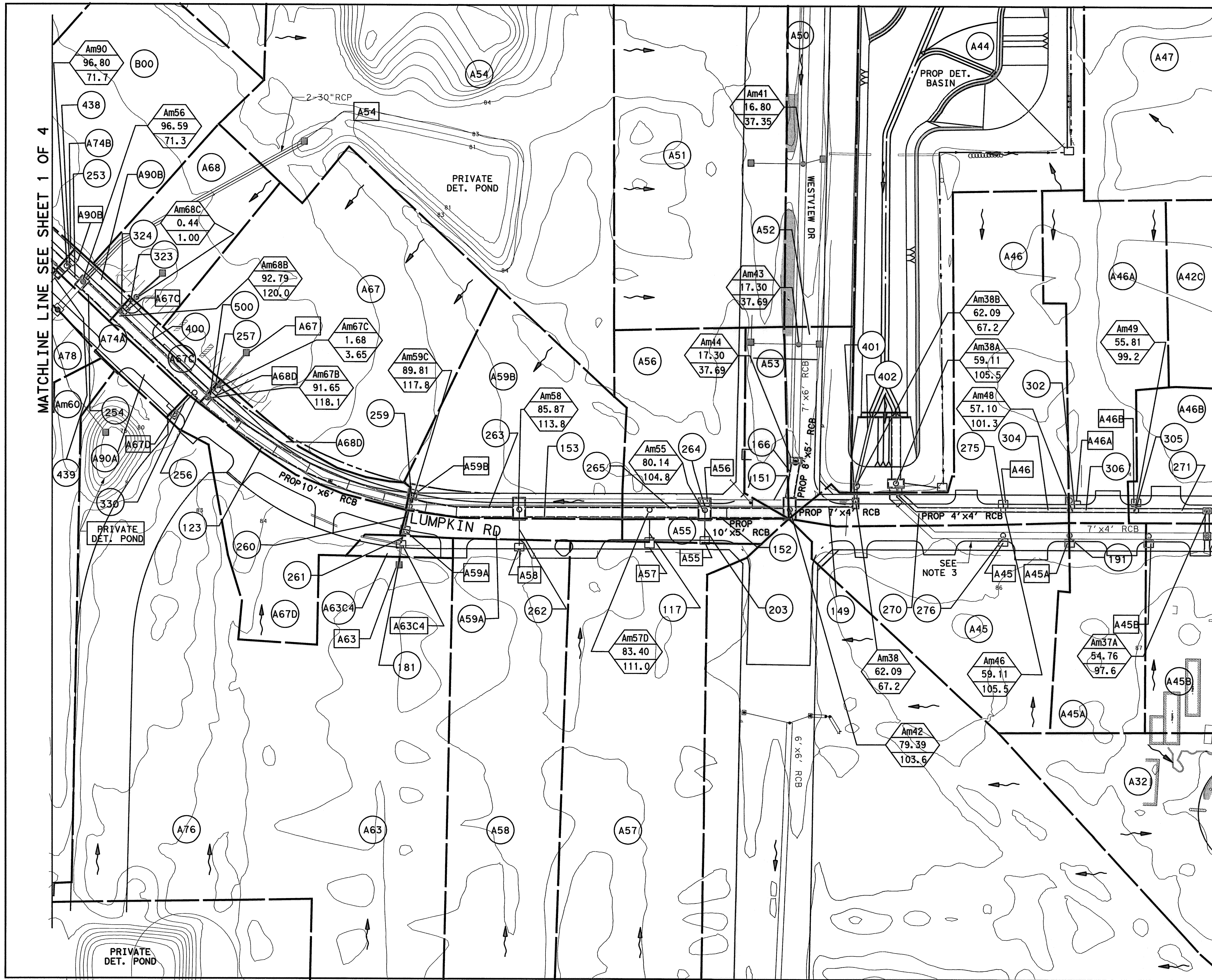


LUMPKIN ROAD  
N-T17000-0012-3  
PROPOSED DRAINAGE AREA MAP (1 OF 4)

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

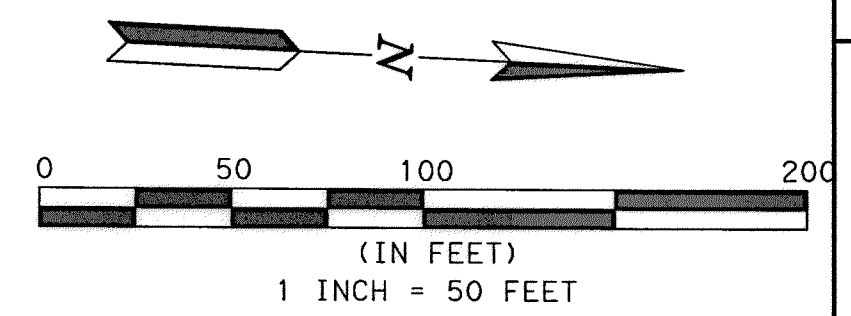
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE: 1"=50'	CITY DWG NO.	
VERT:		
HORZ:		
SHEET:		
18 OF 226		

APP. REVISIONS No. DATE 18-18-54 AM 4/9/17/2014 pw\l\ledpw\l\adco\int\projec\w\sa\Documents\Projects\130-10384-001\4-B-Prop\Drawings\Drawings\18-001-PR-DRN-AREA-MAP (1 OF 4) 9/12/14



MATCHLINE LINE SEE SHEET 1 OF 4

MATCHLINE LINE SEE SHEET 3 OF 4



- NOTES:**
1. CONTOURS SHOWN FROM 2008 LIDAR FOR INFORMATION PURPOSES ONLY.
  2. CONTOURS ARE ON NAVD88 DATUM.
  3. THIS CONTRACT ENDS AT STA 25+94.17. ALL STORM FLOWS ARE BASED ON ULTIMATE IMPROVEMENTS.

**LEGEND**

	MANHOLE NUMBER
	TOTAL CUMULATIVE AREA (AC)
	2-YR Q (CFS)
	DRAINAGE AREA
	INLET ID
	HOUSTORM RUN NO.
	PROPOSED RCB
	PROPOSED STORM SEWER
	2 YR FLOW DIRECTION
	PROP INLET
	EXIST INLET
	PROP MANHOLE
	DRAINAGE AREA

9-12-14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**LAN Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

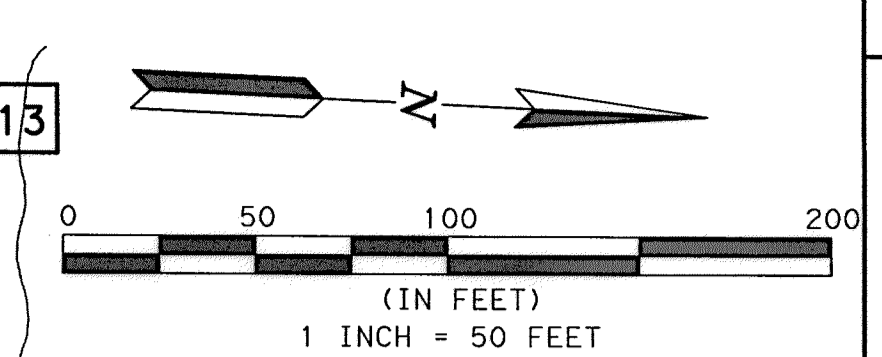
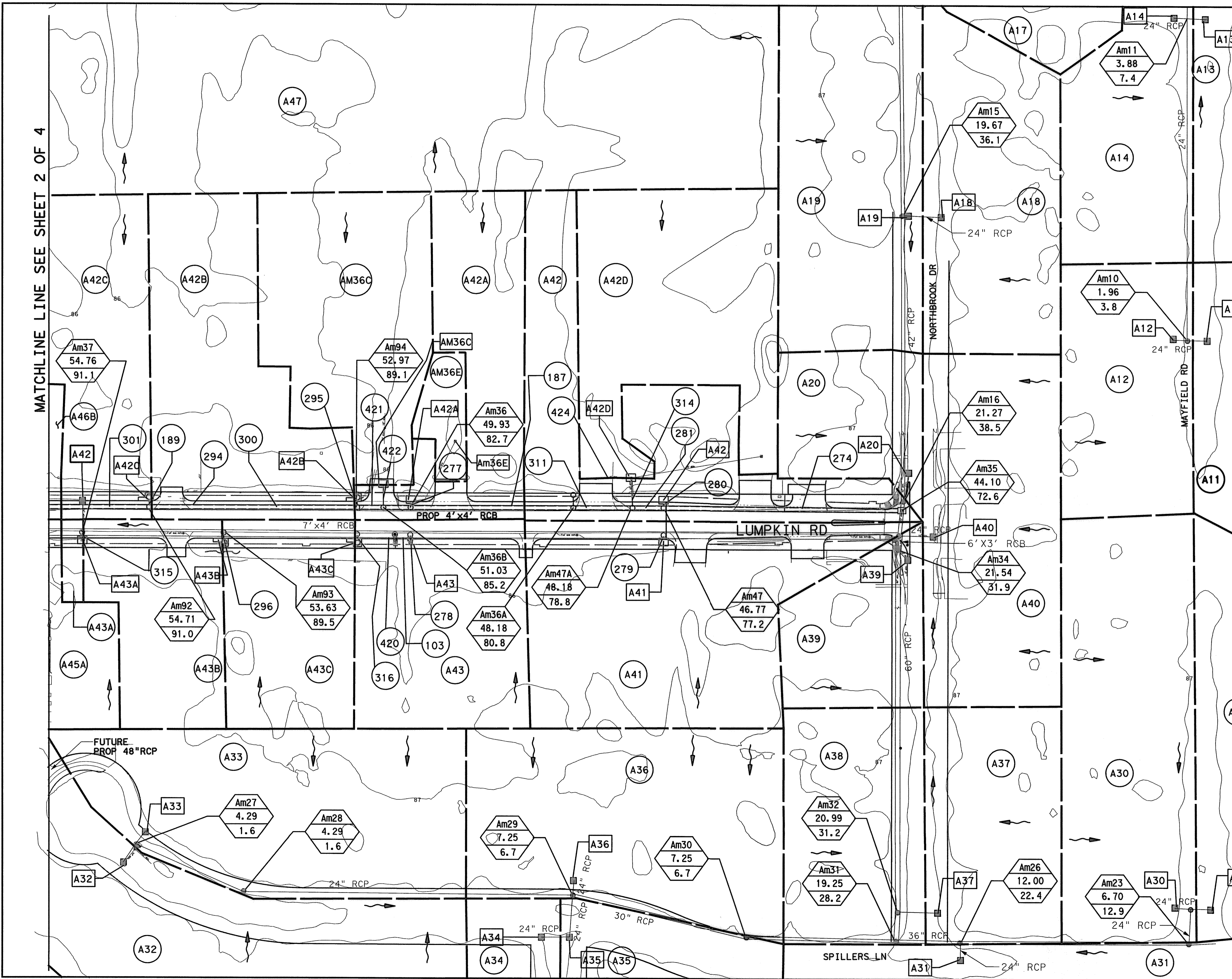
**LUMPKIN ROAD  
N-T17000-0012-3  
PROPOSED DRAINAGE  
AREA MAP (2 OF 4)**

**CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING**

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE: 1"=50'	CITY DWG NO.	
VERT:		
HORZ:		
SHEET:	19 OF 226	

APP: REVISIONS: No. DATE: 10-19-10 AM 4/14/2014

MATCHLINE LINE SEE SHEET 2 OF 4



NOTES:

1. CONTOURS SHOWN FROM 2008 LIDAR FOR INFORMATION PURPOSES ONLY.
2. CONTOURS ARE ON NAVD88 DATUM.

LEGEND

- MH# AREA FLOW
- MANHOLE NUMBER
- TOTAL CUMULATIVE AREA (AC)
- 2-YR Q (CFS)
- DRAINAGE AREA
- INLET ID
- HOUSTORM RUN NO.
- PROPOSED RCB
- PROPOSED STORM SEWER
- 2 YR FLOW DIRECTION
- PROP INLET
- EXIST INLET
- PROP MANHOLE
- DRAINAGE AREA

9-12-14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

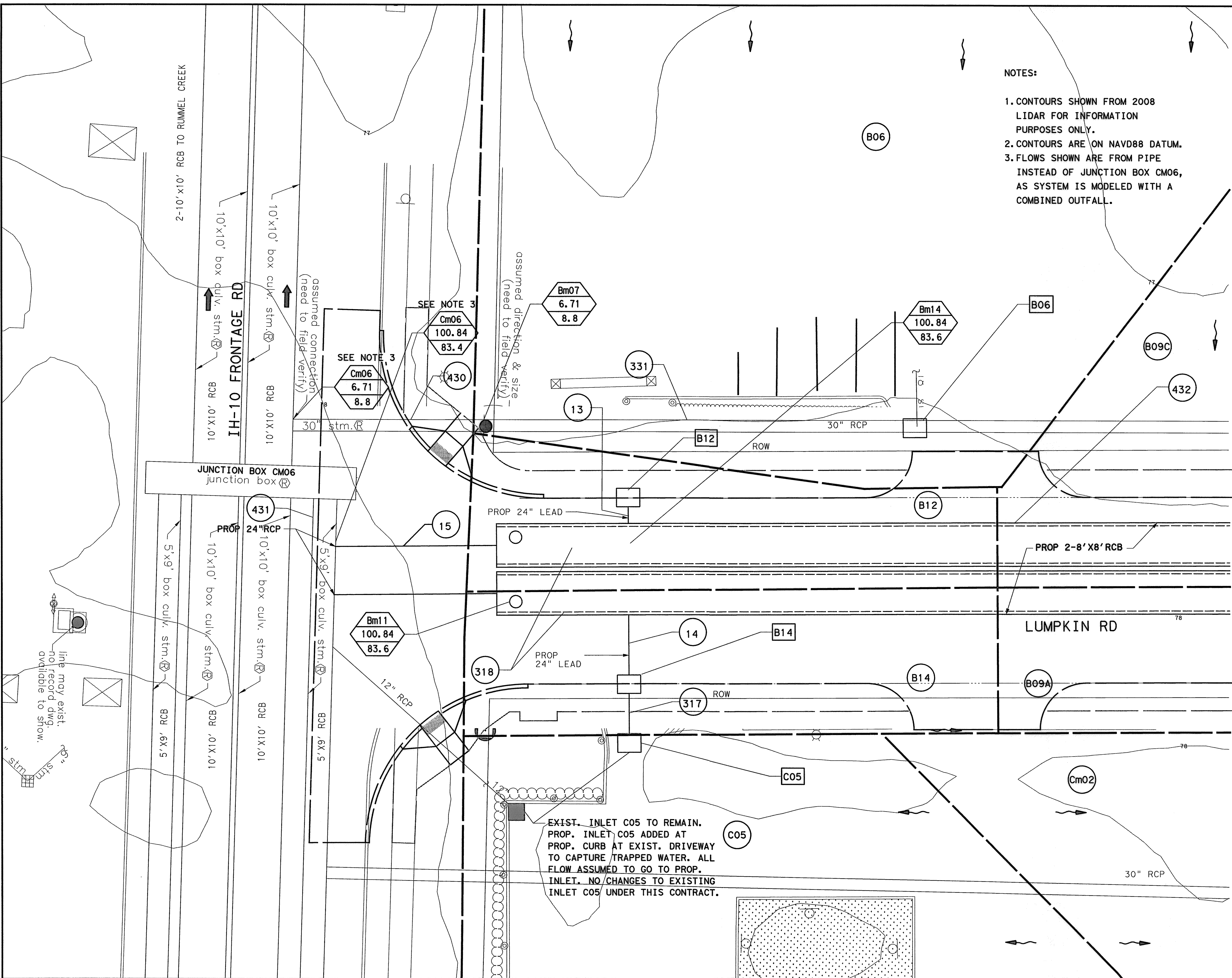
**Lockwood, Andrews & Newnam, Inc.**  
A LEQ A DALY COMPANY

**LUMPKIN ROAD  
N-T17000-0012-3  
PROPOSED DRAINAGE  
AREA MAP (3 OF 4)**

**CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING**

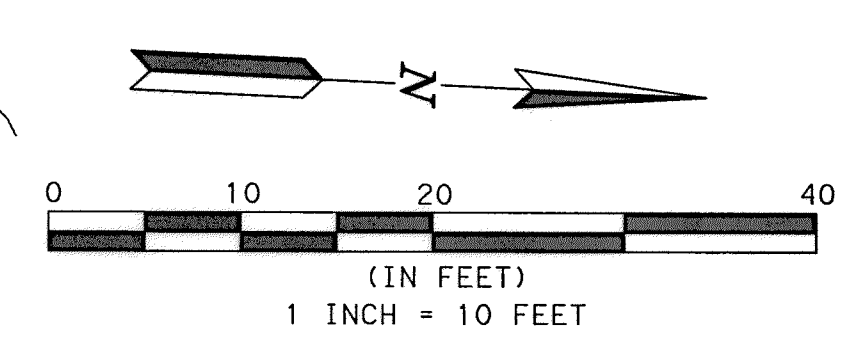
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:		FACILITY
DRAWING SCALE: 1"=50'		CITY DWG NO.
VERT:		
HORZ:		
SHEET:	20 OF 226	

APP. REVISIONS No. DATE 10-19-24 AM 10-19-24 AM 4/14/2024



NOTES:

1. CONTOURS SHOWN FROM 2008 LIDAR FOR INFORMATION PURPOSES ONLY.
2. CONTOURS ARE ON NAVD88 DATUM.
3. FLOWS SHOWN ARE FROM PIPE INSTEAD OF JUNCTION BOX CM06, AS SYSTEM IS MODELED WITH A COMBINED OUTFALL.



**LEGEND**

	MANHOLE NUMBER TOTAL CUMULATIVE AREA (AC) 2-YR Q (CFS)
	DRAINAGE AREA
	INLET ID
	HOUSTORM RUN NO.
	PROPOSED RCB
	PROPOSED STORM SEWER
	2 YR FLOW DIRECTION
	PROP INLET
	EXIST INLET
	PROP MANHOLE
	DRAINAGE AREA

9-12-14

MEMORIAL CITY REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
PROPOSED DRAINAGE AREA MAP (4 OF 4)

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE: 1"=10'	CITY DNG NO.	
VERT:		
HORZ:		
SHEET:	21 OF 226	

EXIST. INLET C05 TO REMAIN.  
PROP. INLET C05 ADDED AT  
PROP. CURB AT EXIST. DRIVEWAY  
TO CAPTURE TRAPPED WATER. ALL  
FLOW ASSUMED TO GO TO PROP.  
INLET. NO CHANGES TO EXISTING  
INLET C05 UNDER THIS CONTRACT.

APP: [ ]  
 REVISIONS: [ ]  
 No. DATE [ ]  
 10/19/08 AM  
 4/19/07/2014  
 4-01-PR-DRN-AREA-MAP (4 OF 4)  
 130-10384-001\4-0-Products\Drawings\Drainage\21-001-PR-DRN-AREA-MAP (4 OF 4)











SYSTEM A (CONTINUED)

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:

The convey length should be from upstream to downstream inside box. This length may also be used as Pay Item. Using hydraulic length, from node center to node center, may result in profile error, and this length should not be used as Pay Item.

LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	3.0	0.0	8	1215.77
Circular	Concrete	2.0	0.0	76	3669.88
Circular	Concrete	2.5	0.0	3	370.61
Circular	Concrete	5.0	0.0	3	429.0
Box	Concrete	5.0	7.0	7	839.15
Box	Concrete	6.0	7.0	3	733.0
Circular	Concrete	2.5	0.0	9	1521.2
Circular	Concrete	1.25	0.0	4	269.84
Circular	Concrete	1.0	0.0	4	414.83
Circular	Concrete	1.5	0.0	12	1155.5
Circular	Concrete	7.0	0.0	6	1647.27
Ditch	Grass	0.0	0.0	2	413.7
Box	Concrete	4.0	7.0	6	1408.23
Box	Concrete	3.0	6.0	1	23.1

NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft <sup>2</sup> )	Grate Perimeter (ft)	Quantity (each)
Circular Manhole		0.0	0.0	0.0	0.0	0.0	49
Area Inlet (Type E)		5.0	0.0	0.0	0.0	0.0	1000
Box Manhole	Parallel	0.0	0.0	0.0	0.0	0.0	1
Grate In Sag		0.0	0.0	0.0	6.25	10.0	4
Curb In Sag		5.0	0.0	0.0	0.0	0.0	2
Curb On Grade		5.0	0.0	0.0	0.0	0.0	2
Junction Box		0.0	0.0	0.0	0.0	0.0	2
Area Inlet (Type E)		10.0	0.0	0.0	0.0	0.0	2
Conduit Junction		0.0	0.0	0.0	0.0	0.0	2

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years  
 Discharge decreased downstream node Id= A67C Previous intensity used.  
 Decreasing conduit size @ downstream Run# 128  
 Discharge decreased downstream node Id= Am71C Previous intensity used.  
 Discharge decreased downstream node Id= Am73 Previous intensity used.  
 Discharge decreased downstream node Id= Am28 Previous intensity used.  
 Discharge decreased downstream node Id= Am44 Previous intensity used.  
 Decreasing conduit size @ downstream Run# 166  
 Discharge decreased downstream node Id= Am18 Previous intensity used.  
 Discharge decreased downstream node Id= Am17 Previous intensity used.  
 Discharge decreased downstream node Id= Am45b Previous intensity used.  
 Discharge decreased downstream node Id= Am30 Previous intensity used.  
 Decreasing conduit size @ downstream Run# 184  
 Discharge decreased downstream node Id= Am57bC5 Previous intensity used.  
 Discharge decreased downstream node Id= Am04 Previous intensity used.  
 Discharge decreased downstream node Id= Am05 Previous intensity used.  
 Discharge decreased downstream node Id= Am06 Previous intensity used.

Discharge decreased downstream node Id= Am14 Previous intensity used.  
 Discharge decreased downstream node Id= Am23 Previous intensity used.  
 Discharge decreased downstream node Id= Am33 Previous intensity used.  
 Decreasing conduit size @ downstream Run# 106  
 Discharge decreased downstream node Id= Am45 Previous intensity used.  
 Discharge decreased downstream node Id= Am61 Previous intensity used.  
 Computed right ponded width exceeds allowable width at inlet Id= A63  
 Computed left ponded width exceeds allowable width at inlet Id= A63  
 Computed right ponded width exceeds allowable width at inlet Id= A57  
 Computed left ponded width exceeds allowable width at inlet Id= A57  
 Computed right ponded width exceeds allowable width at inlet Id= A86  
 Computed left ponded width exceeds allowable width at inlet Id= A86  
 Run# 195 Insufficient capacity.  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 190  
 Run# 189 Insufficient capacity.  
 Run# 190 Insufficient capacity.  
 Run# 191 Insufficient capacity.  
 Run# 194 Insufficient capacity.  
 Run# 193 Insufficient capacity.  
 Upstream HGL exceeds critical elevation (Design) at node Id= A82 Run # 193  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 136  
 Run# 187 Insufficient capacity.  
 Run# 192 Insufficient capacity.  
 Upstream HGL exceeds critical elevation (Design) at node Id= A81 Run # 192  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 207  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 231  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 128  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 129  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 131  
 Run# 123 Insufficient capacity.  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 184  
 Run# 135 Insufficient capacity.  
 Upstream HGL exceeds critical elevation (Design) at node Id= A77 Run # 135  
 Upstream HGL exceeds critical elevation (Design) at node Id= A65 Run # 184  
 Run# 183 Insufficient capacity.  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 203  
 Run# 120 Insufficient capacity.  
 Upstream HGL exceeds critical elevation (Design) at node Id= Am63C4 Run # 120  
 Run# 152 Insufficient capacity.  
 Run# 180 Insufficient capacity.  
 Upstream HGL exceeds critical elevation (Design) at node Id= A62 Run # 180  
 Run# 181 Insufficient capacity.  
 Upstream HGL exceeds critical elevation (Design) at node Id= A63 Run # 181  
 Upstream HGL exceeds critical elevation (Design) at node Id= A61 Run # 182  
 Run# 151 Insufficient capacity.  
 Run# 166 Insufficient capacity.  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 112  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 164  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 165  
 Run# 29 Insufficient capacity.  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 147  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 148  
 Run# 147 Insufficient capacity.  
 Upstream HGL exceeds critical elevation (Design) at node Id= A42 Run # 147  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 162  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 163  
 Run# 108 Insufficient capacity.  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 146  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 157  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 158  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 39  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 38  
 Run# 157 Insufficient capacity.  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 62  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 142  
 Run# 156 Insufficient capacity.  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 69  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 75  
 Run# 49 Insufficient capacity.  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 11  
 HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 12  
 Run# 46 Insufficient capacity.  
 Run# 110 Insufficient capacity.  
 Run# 48 Insufficient capacity.  
 Run# 10 Insufficient capacity.

NOTES:

- SEE PAVEMENT AND STORM SEWER SHEETS FOR MORE INFORMATION.
- ALL STORM SEWER LENGTHS ARE BASED ON CENTER OF STRUCTURE (HYDRAULIC LENGTH) EXCEPT AT BOX CULVERT LATERALS WHERE INSIDE EDGE OF BOX CULVERT OR JUNCTION BOX IS LIMIT OF PIPE.
- COST FOR CONNECTION TO EXISTING STORM SEWERS WILL BE SUBSIDIARY TO STRUCTURE.
- VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- TAILWATER FOR 2-YR ANALYSIS, SYSTEM A, IS TOP OF PIPE AT THE 84"RCP OUTFALL INTO THE BOX UNDERNEATH THE IH-10 FRONTAGE ROAD EAST OF LUMPKIN, 73.75.

9-12-14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY

Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
2-YEAR HOUSTORM OUTPUT,  
EXISTING CONDITIONS  
(5 OF 7)

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG. NO.	
VERT:		
HORZ:		
SHEET:		
26 OF 226		

APP: REVISIONS: DATE: No. 7/10/08 38 AM MUGuthr-1e pww\l\edpw. l\edco. int\project\156\Documents\Projects\130-10284-001\4-0-0-Drawings\Drawings\02-1-2-YEAR EXISTING HOUSTORM OUTPUT\201\_45 OF 710868-38 AM



# SYSTEM C

HouStorm (City Of Houston STORM DRAIN DESIGN)  
Nov/01/2007

Version 2.1, Update:  
Run @ 7/16/2014 8:05:34 AM

PROJECT NAME : HCC-Stormline C  
JOB NUMBER :  
PROJECT DESCRIPTION :

PROJECT File: L:\130-10384-001\*Read Only\9-0-Non-Projectwise\*Data\9-03-Model.in

DESIGN FREQUENCY : 2 Years  
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR DESIGN FREQUENCY of: 2 Years

### Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
C03	0.75	1.09	25.15	25.15	3.40	0.000	2.777
C04	0.76	0.92	24.85	24.85	3.42	0.000	2.389
Cm02	0.76	0.48	23.78	23.78	3.49	0.000	1.274
C06	0.75	1.85	26.15	26.15	3.33	0.000	4.620
C05	0.75	0.58	24.09	24.09	3.47	0.000	1.510

### On Grade Inlet Configuration Data

Inlet ID	Inlet Type	Inlet Length (ft)	Slopes Long (%)	Slopes Trans (%)	Gutter n	Depr. (ft)	Grate Width (ft)	Type	Pond Width Allowed (ft)
C03	Curb	10.00	0.50	2.00	0.014	0.33	n/a	n/a	12.00

### On Grade Inlets Computation Data.

Inlet ID	Inlet Type	Total Q (cfs)	Intercept Capacity (cfs)	Q Bypass Allow (cfs)	Q Actual (cfs)	To Inlet ID	Required Length (ft)	Actual Length (ft)	Ponded Width (ft)
C03	Curb	2.777	2.777	0.000	0.000		7.78	10.00	11.45

### Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Inlet Length/Perim (ft)	Grate Area (sf)	Left-Slope Longi (%)	Right-Slope Transv (%)	Right-Slope Longi (%)	Gutter n	DeprW (ft)	Head Allowed (ft)
C04	Grate	3.50	10.00	0.50	2.00	0.50	2.00	0.014	n/a
C06	Grate	3.50	10.00	0.50	2.00	0.50	2.00	0.014	n/a
C05	Grate	3.50	10.00	0.50	2.00	0.50	2.00	0.014	1.50

### Sag Inlets Computation Data.

Inlet ID	Inlet Type	Inlet Length (ft)	Grate Perim (ft)	Grate Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Actual Head (ft)	Ponded Left (ft)	Width Right (ft)
C04	Grate	n/a	3.50	10.00	2.389	19.849	0.366	8.35	8.35
C06	Grate	n/a	3.50	10.00	4.620	19.849	0.568	10.70	10.70
C05	Grate	n/a	3.50	10.00	1.510	19.849	0.269	4.45	8.55

### Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
Cm01	CrcMh	0.750	1.09	25.17	3.40	0.00	0.00	2.777
Cm02	CrcMh	0.756	2.49	26.00	3.34	0.00	0.00	6.283
Cm05	CrcMh	0.750	1.85	26.91	3.28	0.00	0.00	4.620
C03	Curb	0.750	1.09	25.15	3.40	0.00	0.00	2.777
C04	Grate	0.760	0.92	24.85	3.42	0.00	0.00	2.389
C06	Grate	0.750	1.85	26.15	3.33	0.00	0.00	4.620
Cm04	CrcMh	0.753	4.92	29.37	3.13	0.00	0.00	11.603
C05	Grate	0.750	0.58	24.09	3.47	0.00	0.00	1.510
Cm06	BoxMh	0.753	4.92	29.37	3.13	0.00	0.00	11.603

### Conveyance Configuration Data

Run #	Node US	I.D. DS	FlowLine US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n*value
2	C03	Cm01	74.52	74.47	Cir 1	0.00	1.25	5.5	0.909	0.013
3	Cm01	Cm02	74.47	72.27	Cir 1	0.00	2.00	237.0	0.928	0.013
4	C04	Cm02	73.65	72.27	Cir 1	0.00	2.00	94.0	1.468	0.013
5	Cm02	Cm04	71.77	71.70	Cir 1	0.00	2.50	203.0	0.034	0.013
7	C06	Cm05	70.20	70.00	Cir 1	0.00	2.00	130.0	0.154	0.013
8	Cm05	Cm04	67.09	66.96	Box 1	5.00	9.00	222.0	0.059	0.015
9	C05	Cm04	75.35	75.00	Cir 1	0.00	1.00	23.5	1.490	0.013
1	Cm04	Cm06	66.96	66.95	Box 1	5.00	9.00	1.0	1.000	0.015

### Conveyance Hydraulic Computations. Tailwater = 72.670 (ft)

Run #	Hyd. Gr. (ft)	line DS (ft)	Crit. Elev. US (ft)	Fr. Slope (%)	Depth Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
2*	75.11	75.05	78.95	0.183	0.59	0.59	4.89	4.89	2.8	6.2	0.000
3*	75.05	73.09	78.97	0.015	0.48	0.82	4.76	2.29	2.8	21.9	0.000
4*	74.19	73.09	76.87	0.011	0.40	0.82	5.36	1.97	2.4	27.5	0.000
5	73.09	72.67	77.75	0.023	1.72	1.72	1.75	1.75	6.3	7.6	0.000
7	72.95	72.80	76.50	0.041	1.02	2.00	2.86	1.47	4.6	8.9	0.000
8	72.80	72.67	78.00	0.000	0.62	5.71	1.50	0.16	4.6	148.0	0.000
9*	76.04	76.00	77.60	0.178	0.41	1.00	5.03	3.65	1.5	4.4	0.000
1*	72.67	72.67	76.70	0.000	0.45	5.72	5.19	4.21	11.6	611.7	0.000

\* Supercritical flow.

### SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE:  
The convey length should be from upstream to downstream inside box.  
This length may also be used as Pay Item.  
Using hydraulic length, from node center to node center, may result in profile error, and this length should not be used as Pay Item.

### LINKS:

Type of Convey Structure	Material	Rise (ft)	Span (ft)	Number of Links of this type	Quantity (ft)
Circular	Concrete	1.25	0.0	1	5.5
Circular	Concrete	2.0	0.0	3	461.0
Circular	Concrete	2.5	0.0	1	203.0
Box	Concrete	9.0	5.0	2	223.0
Circular	Concrete	1.0	0.0	1	23.5

### NODES:

Type of Inlet Structure	Type of Grate	Inlet Length (ft)	Grate Width (ft)	Grate Length (ft)	Grate Area (ft <sup>2</sup> )	Grate Perimeter (ft)	Quantity (each)
Circular Manhole		0.0	0.0	0.0	0.0	0.0	4
Curb On Grade		10.0	0.0	0.0	0.0	0.0	1
Grate In Sag	Parallel	0.0	0.0	0.0	10.0	3.5	3
Box Manhole		0.0	0.0	0.0	0.0	0.0	1

====END=====

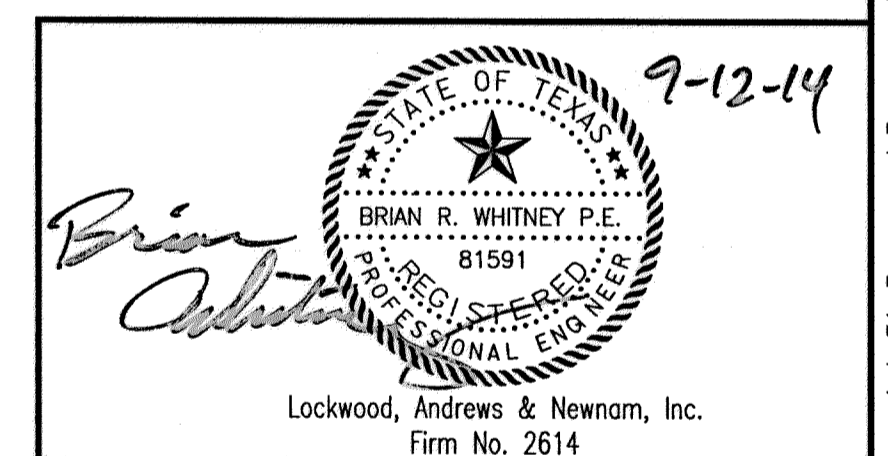
### NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

Runoff Frequency of: 2 Years  
Discharge decreased downstream node Id= Cm01 Previous intensity used.  
Discharge decreased downstream node Id= Cm05 Previous intensity used.  
HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 9

### NOTES:

- SEE PAVEMENT AND STORM SEWER SHEETS FOR MORE INFORMATION.
- ALL STORM SEWER LENGTHS ARE BASED ON CENTER OF STRUCTURE (HYDRAULIC LENGTH) EXCEPT AT BOX CULVERT LATERALS WHERE INSIDE EDGE OF BOX CULVERT OR JUNCTION BOX IS LIMIT OF PIPE.
- COST FOR CONNECTION TO EXISTING STORM SEWERS WILL BE SUBSIDIARY TO STRUCTURE.
- VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- TAILWATER FOR 2-YR ANALYSIS, SYSTEM C, IS EQUIVALENT TO THE TOP OF EXISTING 2-10'X10'RCB UNDERNEATH THE IH-10 WESTBOUND FRONTAGE ROAD, 72.67'.
- "OUT" IS A DUMMY NODE REPRESENTING THE OUTFALL IN THE 5'X9'RCB UNDERNEATH THE IH-10 WESTBOUND FRONTAGE ROAD 1-FT DOWNSTREAM OF CM04.
- WHERE SURVEY WAS NOT AVAILABLE, ELEVATIONS WERE APPROXIMATED FROM CITY GIMS OR TXDOT DATA.



Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**  
**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
2-YEAR HOUSTORM OUTPUT,  
EXISTING CONDITIONS  
(7 OF 7)

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT:	
HORZ:	
SHEET:	
28 OF 226	











SYSTEM AB (CONTINUED)

Conveyance Hydraulic Computations. Tailwater = 72.670 (ft)

Table with columns: Run #, Hyd. US (ft), Gr. line DS (ft), Crit. Elev (ft), Fr. Slope (%), Depth Unif. (ft), Actual (ft), Velocity Unif. (ft/s), Actual (ft/s), Q (cfs), Cap (cfs), Junc Loss (ft). Rows include data for runs 331\* through 97.

\* Supercritical flow.

SUMMARY OF STORM DRAIN STRUCTURE QUANTITIES

NOTE: The convey length should be from upstream to downstream inside box. This length may also be used as Pay Item. Using hydraulic length, from node center to node center, may result in profile error, and this length should not be used as Pay Item.

LINKS: Table with columns: Type of Convey Structure, Material, Rise (ft), Span (ft), Number of Links of this type, Quantity (ft).

Table with columns: Structure, Material, Rise (ft), Span (ft), Number of Links of this type, Quantity (ft). Includes entries for Box, Circular, and Conveyance structures.

NODES:

Table with columns: Type of Inlet Structure, Type of Grate, Inlet Length (ft), Grate Width (ft), Grate Length (ft), Grate Area (ft²), Grate Perimeter (ft), Quantity (each). Includes entries for Circular Manhole, Curb On Grade, Junction Box, Box Manhole, Curb In Sag, Gate In Sag, Conduit Junction, and Area Inlet (Type E).

NORMAL TERMINATION OF HOUSTORM.

Warning Messages for current project:

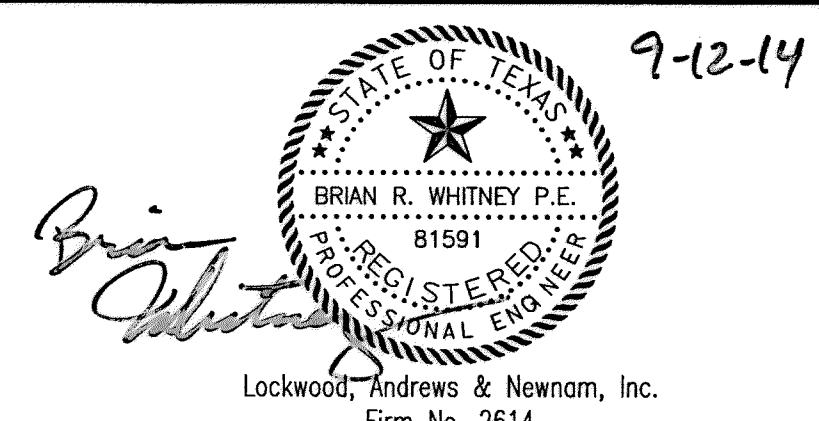
Runoff Frequency of: 2 Years

Discharge decreased downstream node Id= Am67C Previous intensity used. Discharge decreased downstream node Id= Am68C Previous intensity used. ... Capacity of grade inlet exceeded at inlet Id= A45B ACCEPTABLE AS IT IS AN ON-GRADE INLET

HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 163. HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 302. ... HGL elevation below invert. Downstream HGL set to soffit elevation at Run# 62.

NOTES:

- 1. SEE PAVEMENT AND STORM SEWER SHEETS FOR MORE INFORMATION.
2. ALL STORM SEWER LENGTHS ARE BASED ON CENTER OF STRUCTURE (HYDRAULIC LENGTH) EXCEPT AT BOX CULVERT LATERALS WHERE INSIDE EDGE OF BOX CULVERT OR JUNCTION BOX IS LIMIT OF PIPE.
3. COST FOR CONNECTION TO EXISTING STORM SEWERS WILL BE SUBSIDIARY TO STRUCTURE.
4. VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
5. ENGINEER OF RECORD HAS REVIEWED ALL THE WARNING MESSAGES AND THEY ARE ACCEPTABLE WITHIN THE COH GUIDELINES.
6. THE 2-24" RCP OUTFALL, RUN 15, 33" RESTRICTOR, RUN 253, AND 36" POND OUTFALL, RUNS 110, 401 AND 402, WERE MODELED WITH EQUIVALENT PIPE SIZES TO MATCH HEAD LOSS OF 2D MODELED PIPES IN SYSTEM AB.



MEMORIAL CITY REDEVELOPMENT AUTHORITY

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY

LUMPKIN ROAD N-T17000-0012-3 2-YEAR HOUSTORM OUTPUT, PROPOSED CONDITIONS (5 OF 5)

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

Project information form with fields for WATER, WASTEWATER, TRAFFIC, ST. & BRIDGE, STORMWATER, SWQ, FILE NO., FACILITY, DRAWING SCALE, VERT. HORZ., SHEET (33 OF 226).

SEE NOTE G

MUGOth-r-1e 9-12-14 P:\1\bdpw\_ledco\_into\_proj\civ\ise\Documents\Projects\130-1\0384-001\1-0-Product\01-4-01-Drawings\Drainage\03-001-2-YEAR HOUSTORM\HOU\2014\5 OF 5\103841-5.dwg

STORM SYSTEM AB 100-YEAR INFOWORKS 2D MODEL HYDRAULIC DATA

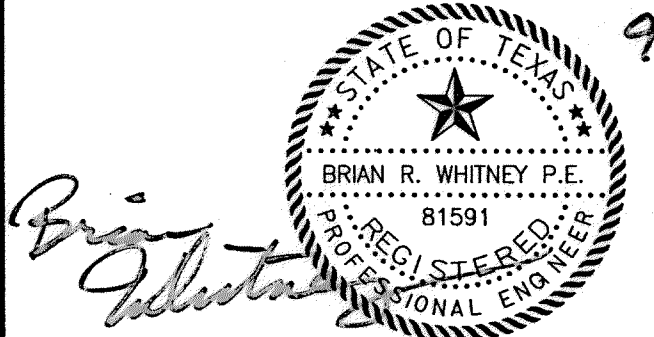
NODE ID	EXIST WSE (FT)	PROP. 100-YR WSE (FT)	DIFF. (FT)	ALLOW. MPE (FT)	DS FLOW (CFS)	NOTES
Am02	88.28	88.21	-0.07	87.85	17.76	HAZELHURST AND MAPLETON
Am07	87.49	87.44	-0.05	87.30	11.50	IVYRIDGE
Am09	87.49	87.46	-0.03	87.55	36.88	IVYRIDGE AND MAPLETON
Am10	86.93	86.83	-0.10	87.23	10.11	MAYFIELD
Am12	86.93	86.69	-0.24	87.30	59.20	MAYFIELD AND MAPLETON
Am14	86.60	85.45	-1.15	86.60	66.56	NORTHBROOK AND MAPLETON
Am15	86.45	85.70	-0.75	86.35	65.94	NORTHBROOK
Am16	86.44	84.51	-1.93	86.20	80.64	NORTHBROOK AND LUMPKIN
Am19	87.49	87.49	0.00	87.95	14.08	NORTHBROOK AND SPILLERS
Am20	87.13	86.97	-0.16	87.40	13.17	IVYRIDGE AND SPILLERS
Am21	87.13	86.95	-0.18	87.40	14.06	IVYRIDGE AND SPILLERS
Am22	86.97	86.76	-0.21	87.40	25.53	SPILLERS
Am24	86.71	86.42	-0.29	86.80	20.30	SPILLERS AND MAYFIELD
Am25	86.70	86.41	-0.29	87.35	38.60	SPILLERS AND MAYFIELD
Am26	86.53	85.86	-0.67	86.60	58.17	SPILLERS
Am27	87.01	86.39	-0.62	86.10	-14.73	SPILLERS CUL-DE-SAC
Am28	87.01	86.39	-0.62	86.40	-14.73	SPILLERS
Am29	87.01	86.67	-0.34	86.71	17.50	SPILLERS AND BRINWOOD
Am30	86.64	86.46	-0.18	86.80	16.52	SPILLERS
Am31	86.49	85.90	-0.59	86.94	83.69	SPILLERS AND NORTHBROOK
Am33	86.47	84.54	-1.93	86.30	96.42	NORTHBROOK
Am34	86.44	85.38	-1.06	86.00	94.99	NORTHBROOK AND LUMPKIN
Am35	86.44	83.26	-3.18	86.60	185.02	NORTHBROOK AND LUMPKIN
Am36	84.22	84.35	0.13	84.93	225.32	LUMPKIN - SEE NOTE 6
Am37	84.20	82.46	-1.74	85.12	223.96	LUMPKIN
Am37A	84.49	82.46	-2.03	85.00	275.59	LUMPKIN
Am38	84.04	82.79	-1.25	84.40	80.63	LUMPKIN
A44	81.23	84.10	2.87	86.00	71.77	WESTVIEW BASIN - SEE NOTE 6
Am39	84.04	83.94	-0.10	83.15	56.92	WESTVIEW
Am40	84.04	83.94	-0.10	83.28	56.81	WESTVIEW
Am41	84.02	83.93	-0.09	83.70	56.73	WESTVIEW
Am42	81.67	80.72	-0.95	86.86	111.36	WESTVIEW AND LUMPKIN
Am43	84.10	84.06	-0.04	84.70	71.77	WESTVIEW
Am44	82.74	80.72	-2.02	85.60	72.96	WESTVIEW

NODE ID	EXIST WSE (FT)	PROP. 100-YR WSE (FT)	DIFF. (FT)	ALLOW. MPE (FT)	DS FLOW (CFS)	NOTES
Am45	84.91	80.69	-4.22	86.00	111.36	LUMPKIN
Am46	84.74	84.18	-0.56	84.69	274.82	LUMPKIN
Am47	85.59	84.60	-0.99	84.68	184.84	LUMPKIN
Am47A	86.16	84.57	-1.59	84.68	225.22	LUMPKIN
Am48	84.74	84.21	-0.53	85.40	275.54	LUMPKIN
Am49	84.74	84.21	-0.53	85.70	224.22	LUMPKIN
Am55	85.11	80.67	-4.44	85.60	111.34	LUMPKIN
Am56	81.00	81.00	0.00	82.90	129.84	LUMPKIN
Am57D	85.04	80.65	-4.39	84.50	111.55	LUMPKIN
Am58	85.09	84.35	-0.74	84.80	115.89	LUMPKIN
Am59	79.14	78.91	-0.23	80.11	41.40	84"RCP
Am59C	83.08	83.02	-0.06	84.20	111.39	LUMPKIN
Am61	79.59	75.94	-3.65	79.40	69.95	84"RCP
Am62	79.01	78.76	-0.25	79.66	70.32	84"RCP
Am63	78.97	75.74	-3.23	79.66	86.62	84"RCP
Am67B	82.08	80.52	-1.56	82.40	126.36	LUMPKIN
Am67C	82.08	80.52	-1.56	83.55	2.80	LUMPKIN
Am68B	81.04	80.82	-0.22	82.30	127.81	LUMPKIN
Am68C	81.04	80.82	-0.22	82.00	5.13	LUMPKIN
Am74	79.14	78.71	-0.43	82.90	41.36	84"RCP
Am75	79.65	78.61	-1.04	80.80	44.60	LUMPKIN
A86	77.89	77.60	-0.29	77.30	107.50	84"RCP
Am90	80.48	80.56	0.08	80.80	44.59	LUMPKIN
Am92	84.48	84.55	0.07	85.60	77.53	LUMPKIN
Am93	83.55	84.50	0.95	84.93	147.04	LUMPKIN
Am94	83.95	84.50	0.55	84.93	77.88	LUMPKIN
Bm08	79.36	80.20	0.84	80.58	45.88	LUMPKIN
Bm09	77.44	78.15	0.71	78.35	45.68	LUMPKIN
Bm10	78.56	78.63	0.07	79.15	44.87	LUMPKIN
Bm14	77.48	78.16	0.68	78.70	45.64	LUMPKIN
OUT	74.55	71.34	-3.21	79.20	45.74	PROPOSED OUTFALL SYSTEM AB AT LUMPKIN
Am64	76.75	75.29	-1.46	80.20	132.73	EXISTING OUTFALL SYSTEM A, 84"
Cm06	74.55	74.52	-0.03	78.00	45.75	EXISTING OUTFALL SYSTEM B

NOTES:

1. THE TAILWATER USED FOR THE 100-YR ANALYSIS WAS 2-FT ABOVE THE TOP OF BOX (2-10' x 10' CULVERTS DOWNSTREAM OF LUMPKIN ROAD). ACTUAL TAILWATERS FROM THE TXDOT IH-10 STUDY WERE REVIEWED, HOWEVER THE RELATIVELY HIGH ELEVATIONS WERE NOT REASONABLE TO EVALUATE HYDRAULICS VS. COH CRITERIA. THEREFORE THE OPTIONAL TAILWATER OF 2-FT ABOVE THE PIPE SOFFIT WAS USED AS PER COH "CONSIDERATIONS FOR CIP PROJECTS" GUIDELINES, NOVEMBER 2009.
2. HYDRAULIC DATA FROM INFOWORKS SD 2D MODEL
3. ALLOWABLE MPE BASED ON THE MINIMUM OF THE LOWEST ROW ELEVATION OR MAXIMUM PONDING DEPTHS AS PER CITY IDM 2013.
4. DRAINAGE SYSTEMS C, D, E, AND F SHOWN ON THE OVERALL DRAINAGE AREA MAPS DO NOT DRAIN DIRECTLY TO LUMPKIN SYSTEM HOWEVER WERE MODELED TO EVALUATE OVERLAND STORM FLOWS IN THE REGION. DATA FOR THESE IS NOT INCLUDED IN THIS TABLE FOR CLARITY.
5. SEE "LUMPKIN ROAD DRAINAGE IMPACT STUDY" MAY 2014 FOR A DISCUSSION OF THE HYDROLOGIC AND HYDRAULIC ANALYSIS.
6. PROPOSED WATER LEVEL INCREASE, BUT STILL BELOW ALLOWABLE MPE.

9-12-14

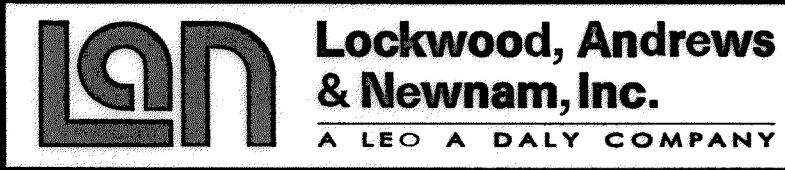


Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

---

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

---



**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

---

LUMPKIN ROAD  
N-T17000-0012-3  
100-YEAR DRAINAGE  
CALCULATION SHEET

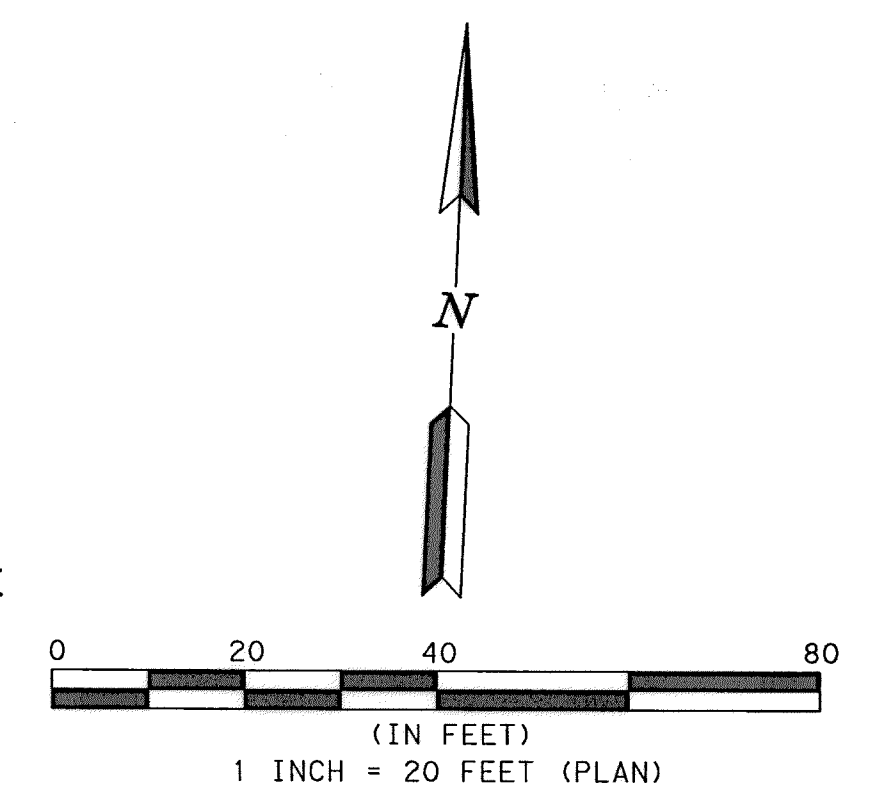
---

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG NO.
VERT:		
HORZ:		
SHEET:		
34 OF 226		

P:\adpw\laddco\1ntr\proj\wise\Documents\Projects\130-10384-001\4-0-Product\1on\4-01-Drawings\Drainage\34-001-100-YEAR DRAINAGE CALCULATION SHEET 10-22-11 AM MJBuhr-1e

NO.	DATE	REVISIONS



**LEGEND**

- TOP OF GRAVITY WALL
- PROP TOP OF BANK
- 5" CONC. PAVING
- BACKSLOPE SWALE
- CONC. PAVEMENT
- PROP FENCE

**NOTES:**

1. SEE WESTVIEW BASIN CROSS SECTIONS FOR ADDITIONAL INFORMATION.
2. SEE WESTVIEW BASIN PAVEMENT LAYOUT FOR ROADWAY GRADING AND PAVEMENT DETAILS.
3. SEE WESTVIEW BASIN GRAVITY WALL LAYOUTS FOR RETAINING WALL INFORMATION

09-12-14

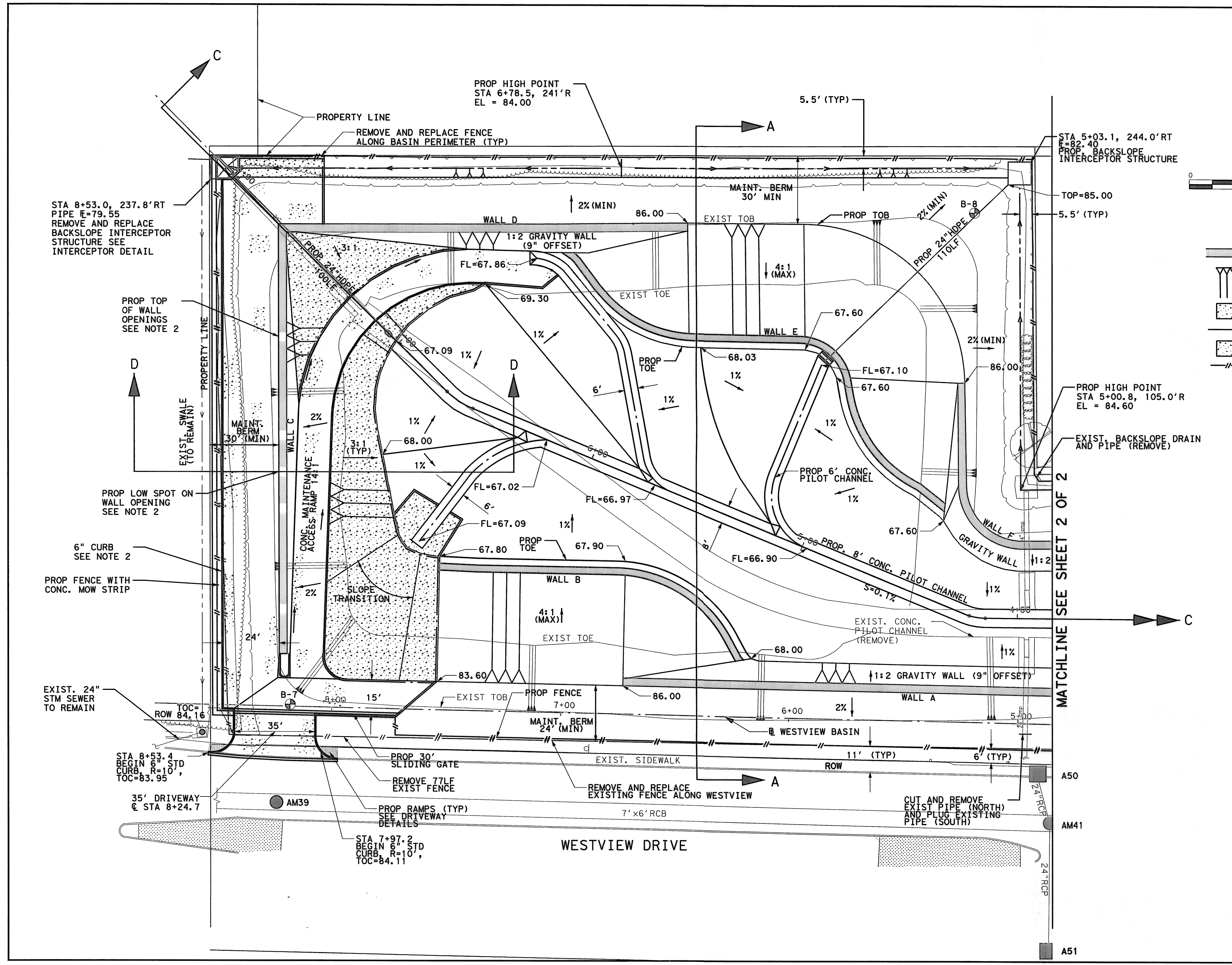
**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews  
& Newnam, Inc.**  
A LEO A DALY COMPANY

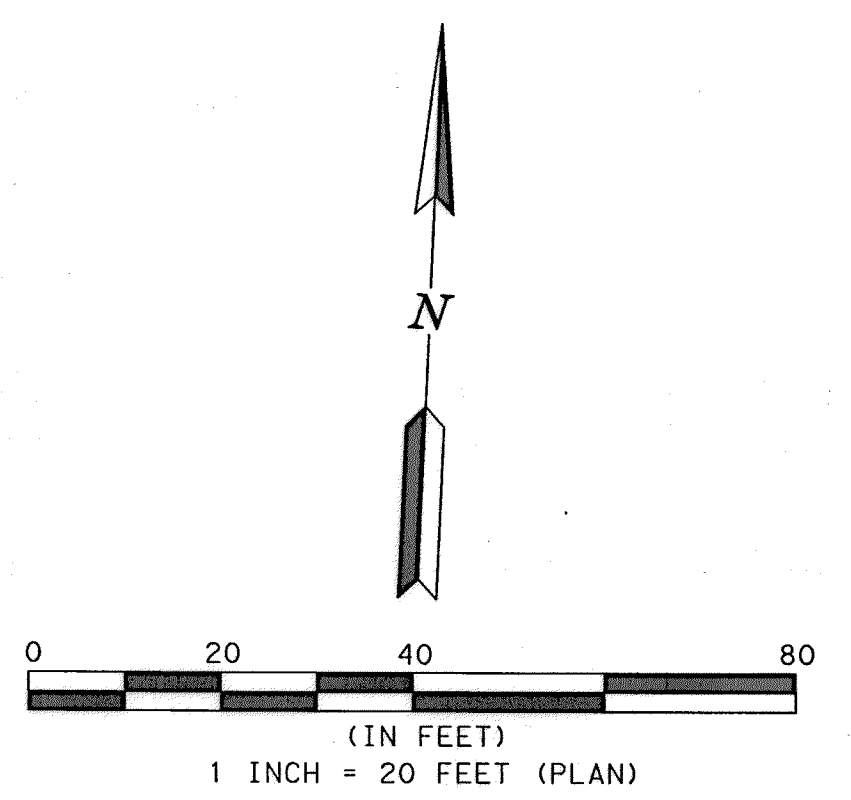
LUMPKIN ROAD  
N-T17000-0012-3  
WESTVIEW BASIN LAYOUT AND  
GRADING SHEET (1 OF 2)

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:		FACILITY
DRAWING SCALE: 1"=20'		CITY DWG NO.
VERT:		
HORZ:		
SHEET:	35 OF 226	



APP
REVISIONS
No.
DATE



- LEGEND**
- TOP OF GRAVITY WALL
  - PROP TOP OF BANK
  - 5" CONC. SLOPE PAVING
  - BACKSLOPE SWALE
  - CONC. PAVEMENT
  - PROP FENCE

- NOTES:**
- SEE WESTVIEW BASIN CROSS SECTIONS FOR ADDITIONAL INFORMATION.
  - SEE LUMPKIN ROAD PLAN AND PROFILE SHEETS FOR PROFILE INFORMATION.
  - SEE WESTVIEW BASIN GRAVITY WALL LAYOUTS, AND DETAILS.

9-12-14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

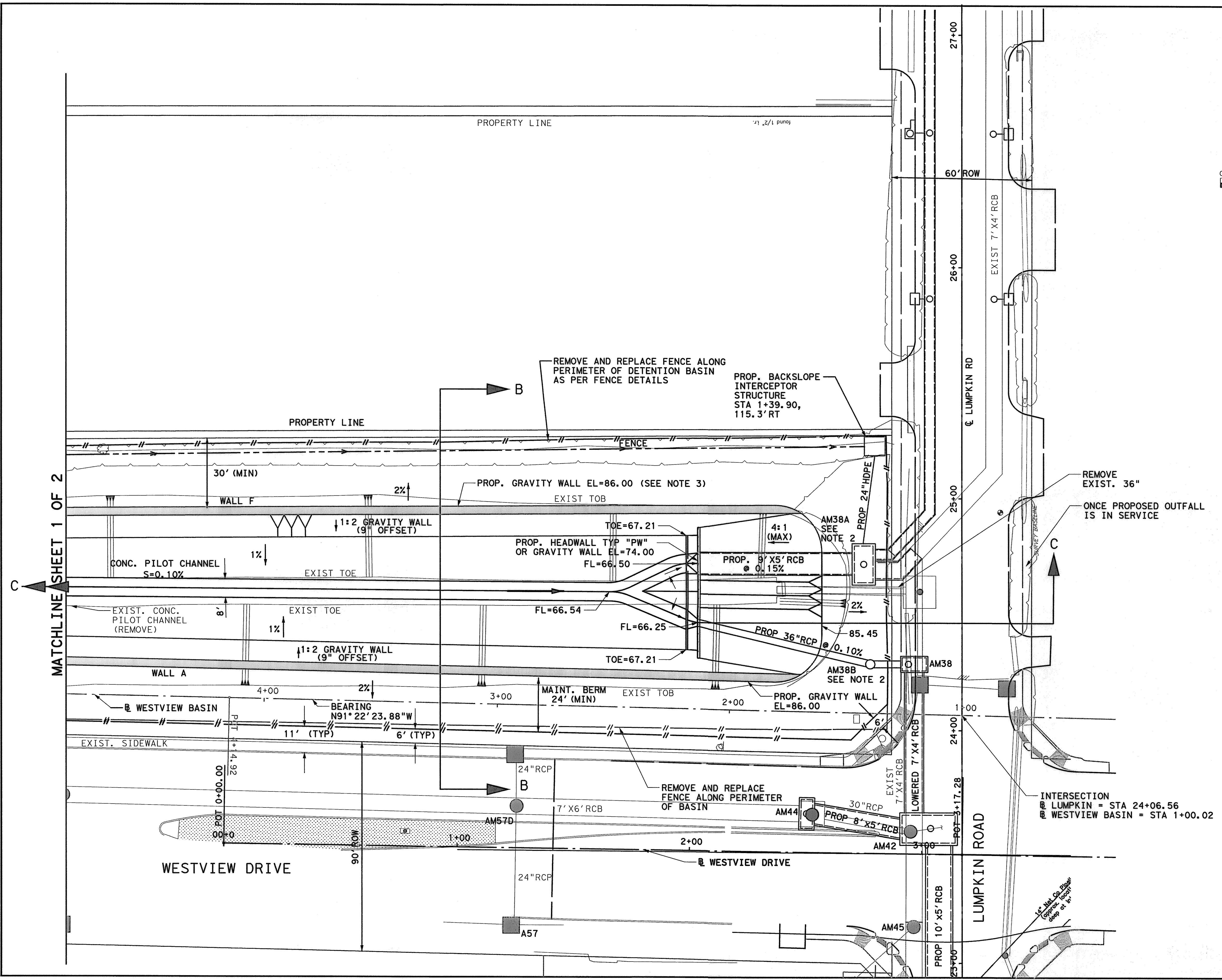
**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**LAN Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

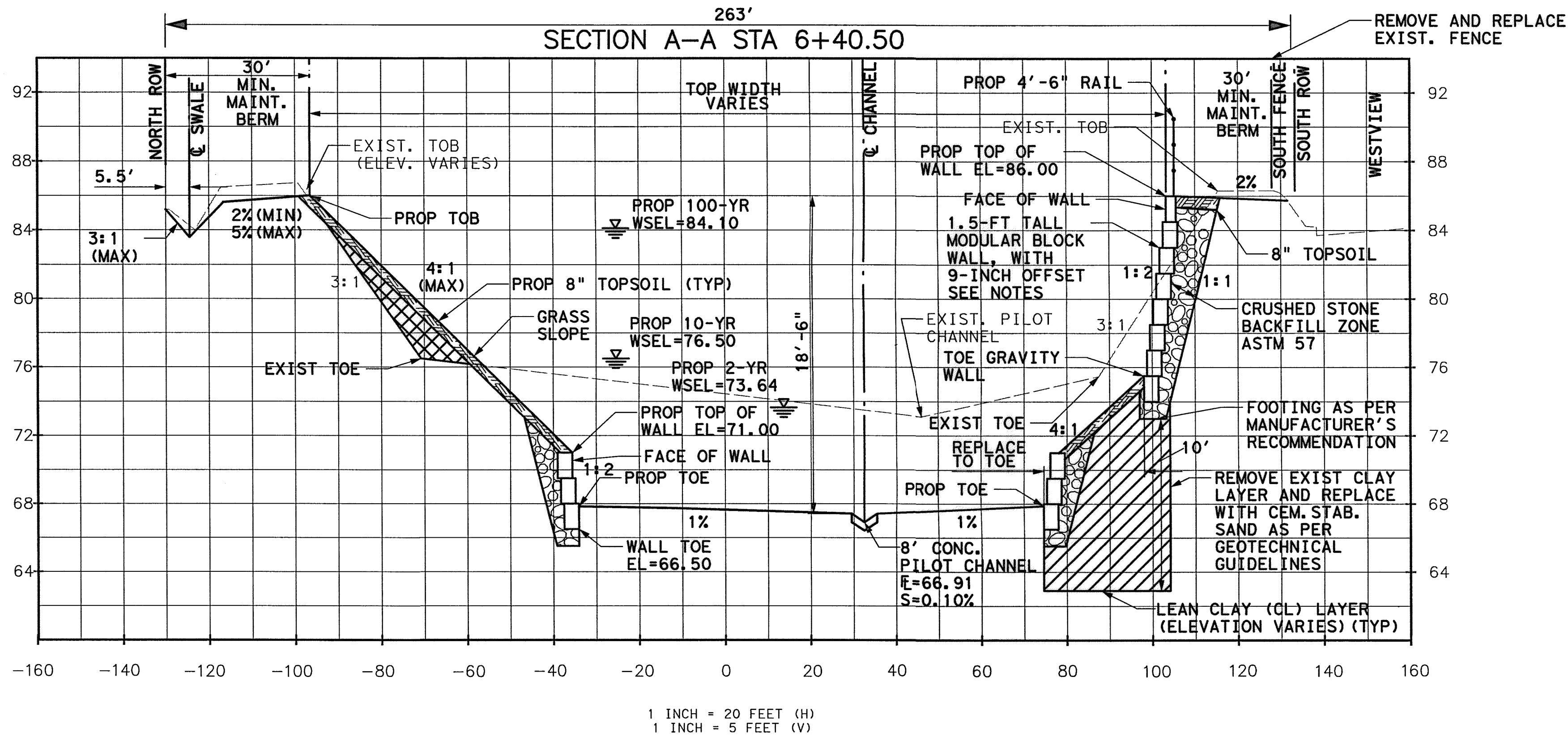
**LUMPKIN ROAD  
N-T17000-0012-3  
WESTVIEW BASIN LAYOUT AND  
GRADING SHEET (2 OF 2)**

**CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING**

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO. 1	FACILITY	
DRAWING SCALE: 1"=20'	CITY DWG. NO.	
VERT:		
HORZ:		
SHEET:	36 OF 226	



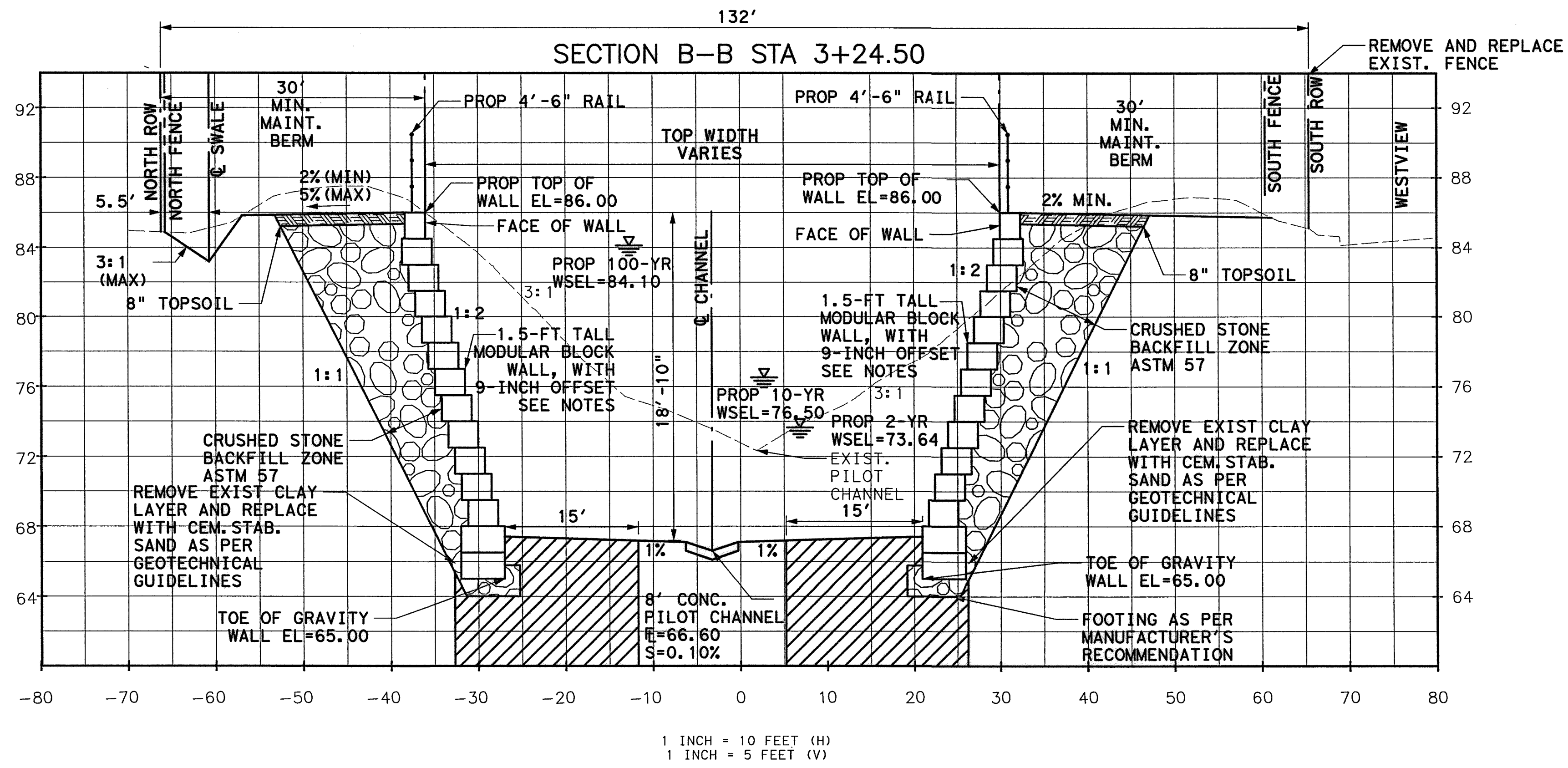
pww\1\edpw\1\adco\1\nt\proj\wise\Documents\Projects\130-10384-001\4-0-0-Production\4-01-Drawings\Drainage\36-001-WESTVIEW BASIN LAYOUT AND GRADING (2 OF 2)-28-283 AM



**LEGEND**

- SELECT FILL
- CEMENT STABILIZED SAND BASE
- CRUSHED STONE BACKFILL
- TOPSOIL

- NOTES:**
- GRAVITY WALL DIMENSIONS BASED ON USING AN 18" THICK BLOCK WITH A 9" OFFSET PER EACH LAYER. WALLS TALLER THAN 12-FEET REQUIRE A 60-INCH DEEP BOTTOM BLOCK.
  - CONTRACTOR SHALL SUBMIT WALL BLOCK LAYOUT AND CALCULATIONS SIGNED AND SEALED BY A PE FOR APPROVAL PRIOR TO CONSTRUCTION.
  - SEE WESTVIEW BASIN DETAILS



Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

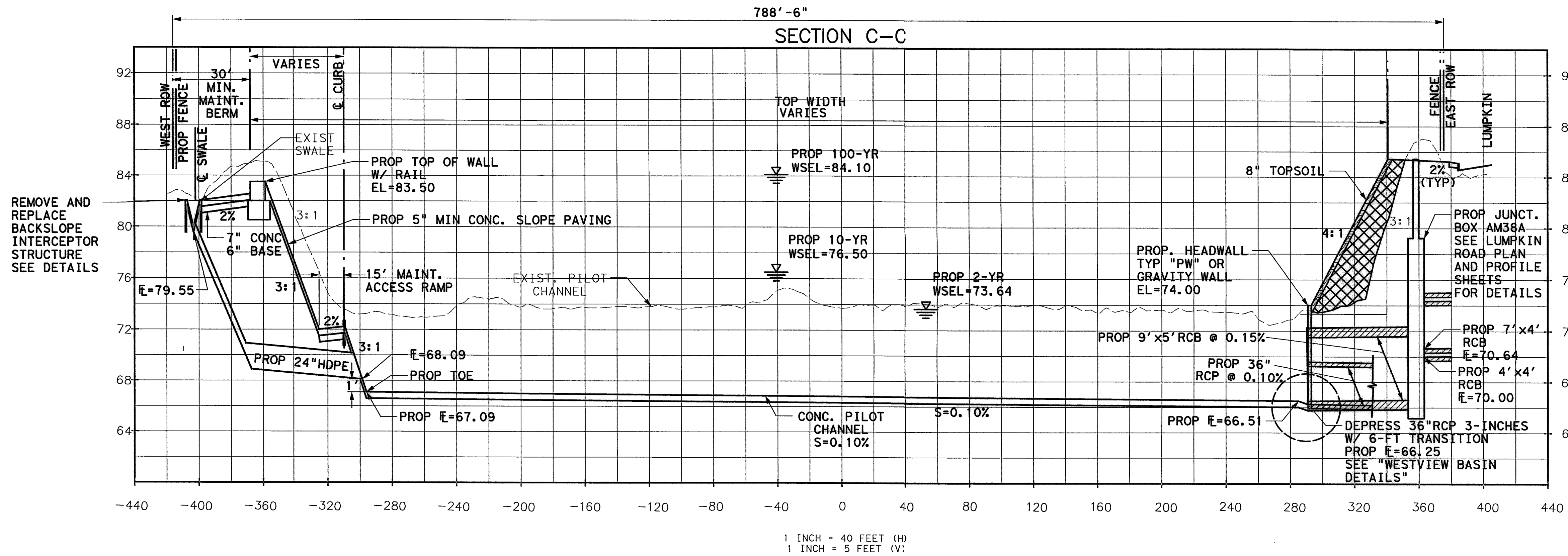
LUMPKIN ROAD  
 N-T17000-0012-3  
**WESTVIEW BASIN CROSS SECTIONS (1 OF 2)**

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD
<b>FILE NO.:</b>	<b>FACILITY</b>	
<b>DRAWING SCALE:</b>	CITY DWG NO.	
<b>VERT:</b>		
<b>SHEET:</b>	37 OF 226	

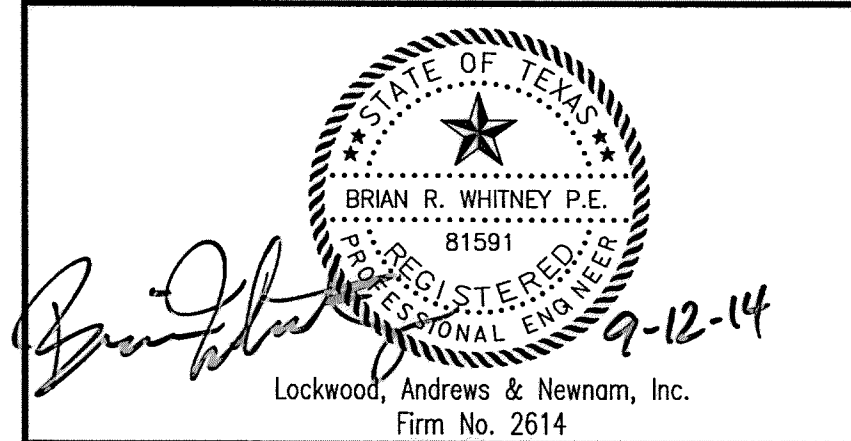
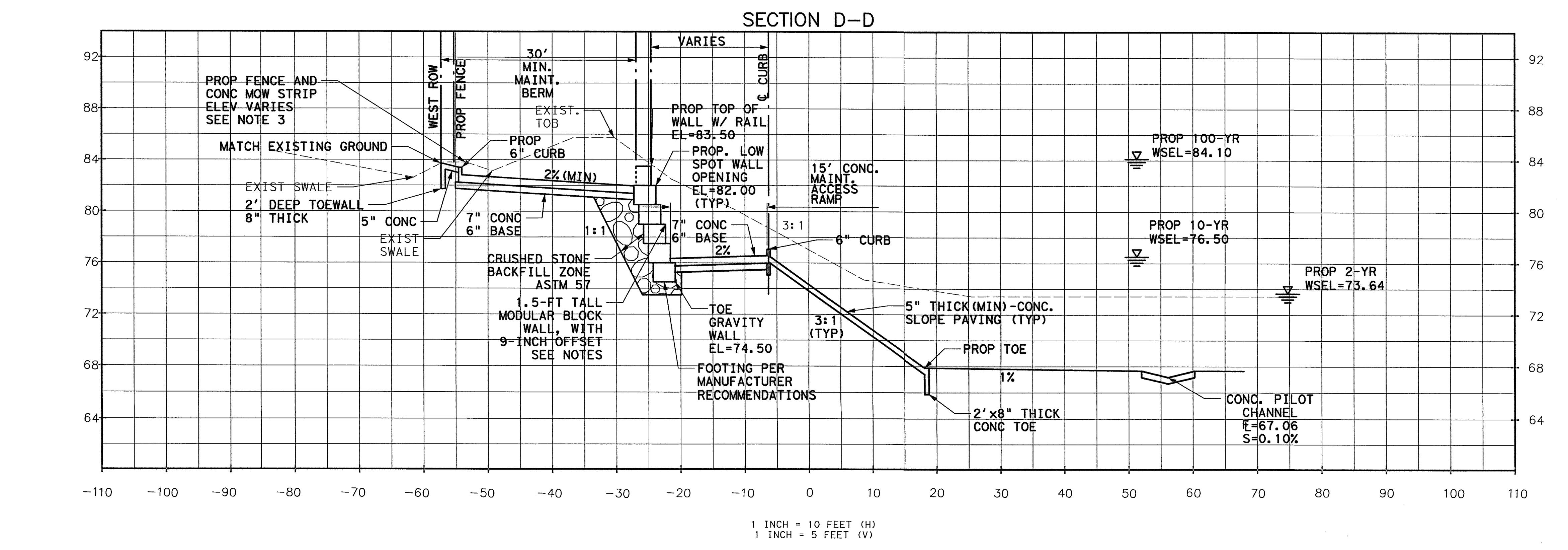
MJDubhr19  
 121.311.21 PM  
 4-01-Production 4-01-Drawings\Drawings\37-001-WESTVIEW BASIN CROSS SECTION\4 of 2

APP.
REVISIONS
No.
DATE



- LEGEND**
- SELECT FILL
  - CRUSHED STONE BACKFILL
  - TOPSOIL

- NOTES:**
1. GRAVITY WALL DIMENSIONS BASED ON USING AN 18" THICK BLOCK WITH A 9" OFFSET PER EACH LAYER. WALLS TALLER THAN 12- FEET REQUIRE A 60-INCH DEEP BOTTOM BLOCK.
  2. CONTRACTOR SHALL SUBMIT WALL BLOCK LAYOUT AND CALCULATIONS SIGNED AND SEALED BY A PE FOR APPROVAL PRIOR TO CONSTRUCTION.
  3. SEE WESTVIEW BASIN DETAILS



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

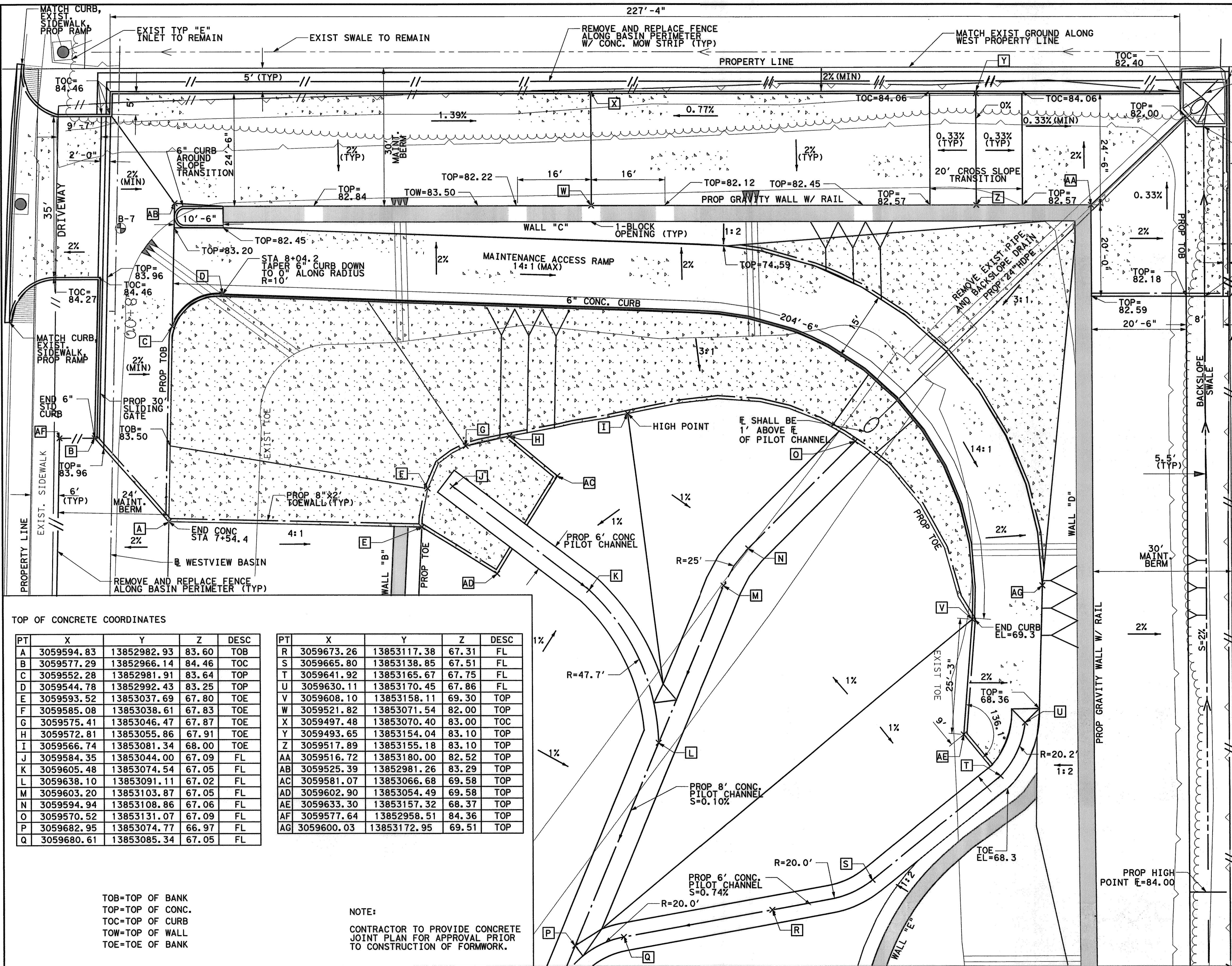


**LUMPKIN ROAD N-T17000-0012-3 WESTVIEW BASIN CROSS SECTIONS (2 OF 2)**

**CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING**

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
<b>FILE NO.:</b>	<b>FACILITY</b>	
<b>DRAWING SCALE:</b>	CITY DWG NO.	
<b>VERT:</b>		
<b>HORZ:</b>		
<b>SHEET:</b>	38 OF 226	

pw\1\adpw. ladoc. int\proj\westview\Documents\Projects\130-10284-001\4-0-P-Product\on\4-01-Drawings\Drainage\38-001-WESTVIEW BASIN CROSS SECTIONS\130-10284-001\4-0-P-Product\on\4-01-Drawings\Drainage\38-001-WESTVIEW BASIN CROSS SECTIONS (2 OF 2) 12:31:33 PM



MATCH EXIST GROUND ALONG PROPERTY LINE CORNER

PROP DITCH INTERCEPTOR  
E=79.55  
SEE DETAIL SHEET

E=81.00

0 10 20 40  
(IN FEET)  
1 INCH = 10 FEET (PLAN)

E=81.20  
MATCH ROW ELEVATION AND CON. STA 8+07.8

REMOVE AND REPLACE FENCE ALONG BASIN PERIMETER (TYP)

**LEGEND**

TOP OF GRAVITY WALL

5" CONC. SLOPE PAVING

CONC. PVMT.

**NOTE:**

1. CONCRETE AREAS ALONG MAINTENANCE BERM, MAINTENANCE ACCESS RAMP, AND DRIVEWAY ARE 7" CONCRETE PAVEMENT WITH A 6" BASE. ALL CONCRETE ALONG SLOPES IS 5" THICK.
2. ALL STATIONS ARE IN REFERENCE TO WESTVIEW BASIN BASELINE.

9-12-14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**LAN Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
WESTVIEW BASIN PAVEMENT LAYOUT

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO.:

DRAWING SCALE: 1"=10'

VERT: HORZ:

SHEET: 39 OF 226

**TOP OF CONCRETE COORDINATES**

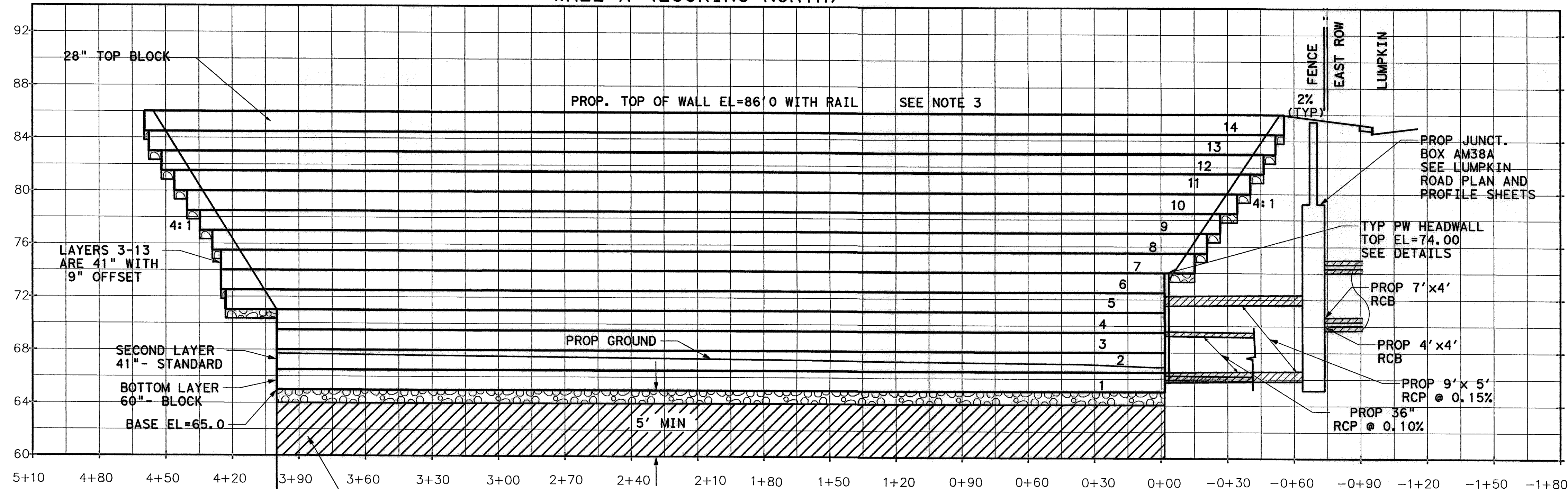
PT	X	Y	Z	DESC
A	3059594.83	13852982.93	83.60	TOB
B	3059577.29	13852966.14	84.46	TOC
C	3059552.28	13852981.91	83.64	TOP
D	3059544.78	13852992.43	83.25	TOP
E	3059593.52	13853037.69	67.80	TOE
F	3059585.08	13853038.61	67.83	TOE
G	3059575.41	13853046.47	67.87	TOE
H	3059572.81	13853055.86	67.91	TOE
I	3059566.74	13853081.34	68.00	TOE
J	3059584.35	13853044.00	67.09	FL
K	3059605.48	13853074.54	67.05	FL
L	3059638.10	13853091.11	67.02	FL
M	3059603.20	13853103.87	67.05	FL
N	3059594.94	13853108.86	67.06	FL
O	3059570.52	13853131.07	67.09	FL
P	3059682.95	13853074.77	66.97	FL
Q	3059680.61	13853085.34	67.05	FL

PT	X	Y	Z	DESC
R	3059673.26	13853117.38	67.31	FL
S	3059665.80	13853138.85	67.51	FL
T	3059641.92	13853165.67	67.75	FL
U	3059630.11	13853170.45	67.86	FL
V	3059608.10	13853158.11	69.30	TOP
W	3059521.82	13853071.54	82.00	TOP
X	3059497.48	13853070.40	83.00	TOC
Y	3059493.65	13853154.04	83.10	TOP
Z	3059517.89	13853155.18	83.10	TOP
AA	3059516.72	13853180.00	82.52	TOP
AB	3059525.39	13852981.26	83.29	TOP
AC	3059581.07	13853066.68	69.58	TOP
AD	3059602.90	13853054.49	69.58	TOP
AE	3059633.30	13853157.32	68.37	TOP
AF	3059577.64	13852958.51	84.36	TOP
AG	3059600.03	13853172.95	69.51	TOP

TOB=TOP OF BANK  
TOP=TOP OF CONC.  
TOC=TOP OF CURB  
TOW=TOP OF WALL  
TOE=TOE OF BANK

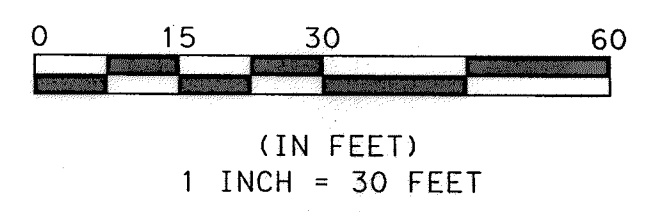
**NOTE:**  
CONTRACTOR TO PROVIDE CONCRETE JOINT PLAN FOR APPROVAL PRIOR TO CONSTRUCTION OF FORMWORK.

WALL A (LOOKING NORTH)



**LEGEND**

	PROP CEM. STAB. SAND
	5" CONC. SLOPE
	CRUSHED STONE BACKFILL



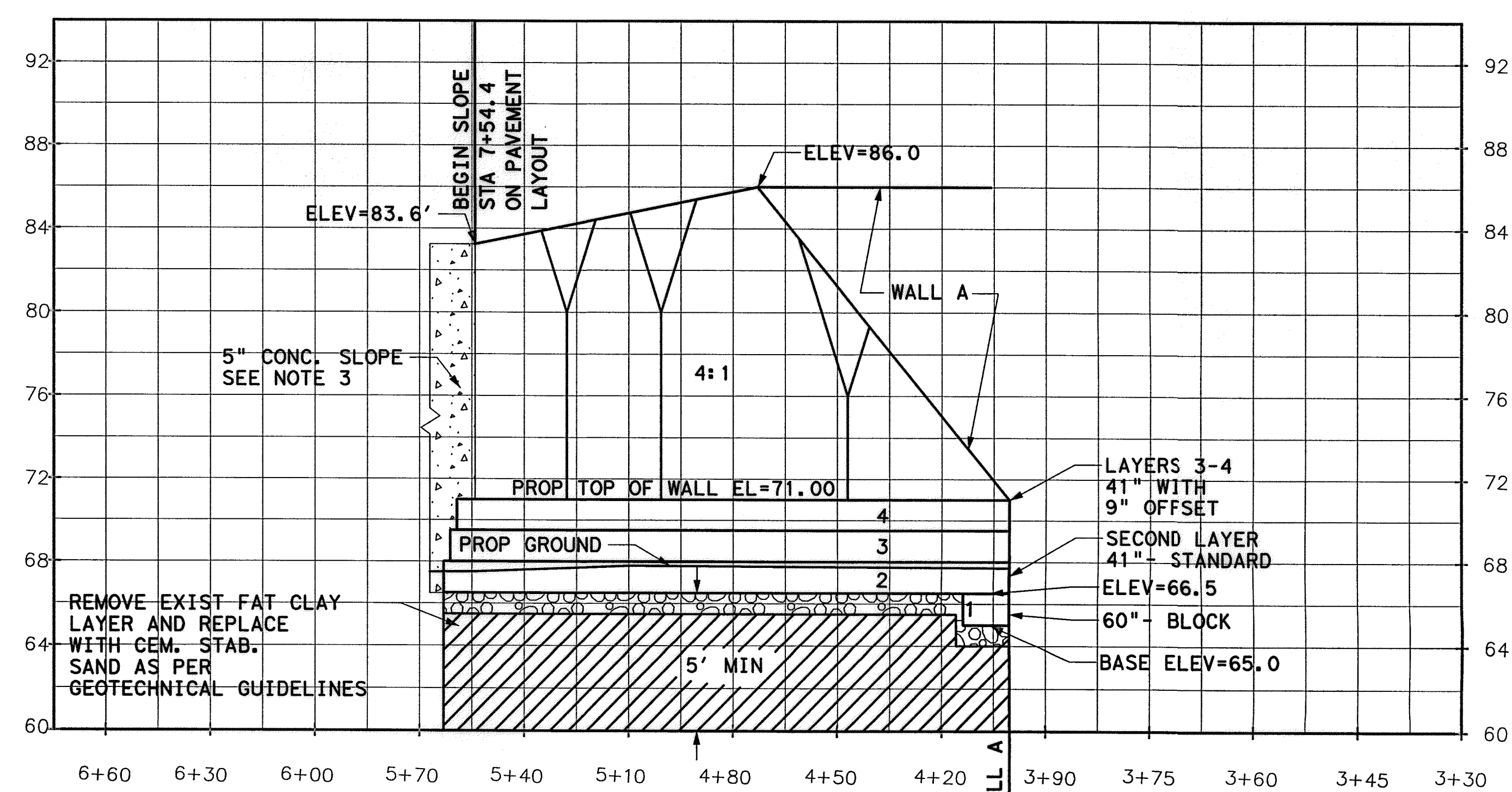
REMOVE EXIST FAT CLAY LAYER AND REPLACE WITH CEM. STAB. SAND AS PER GEOTECHNICAL GUIDELINES

1 INCH = 30 FEET (H)  
1 INCH = 5 FEET (V)

MATCHLINE WALL B STA 4+00.0

STATIONS ARE CONTINUATION OF WALL A ALIGNMENT

WALL B (LOOKING NORTH)



REMOVE EXIST FAT CLAY LAYER AND REPLACE WITH CEM. STAB. SAND AS PER GEOTECHNICAL GUIDELINES

1 INCH = 30 FEET (H)  
1 INCH = 5 FEET (V)

MATCHLINE WALL A STA 4+00.0

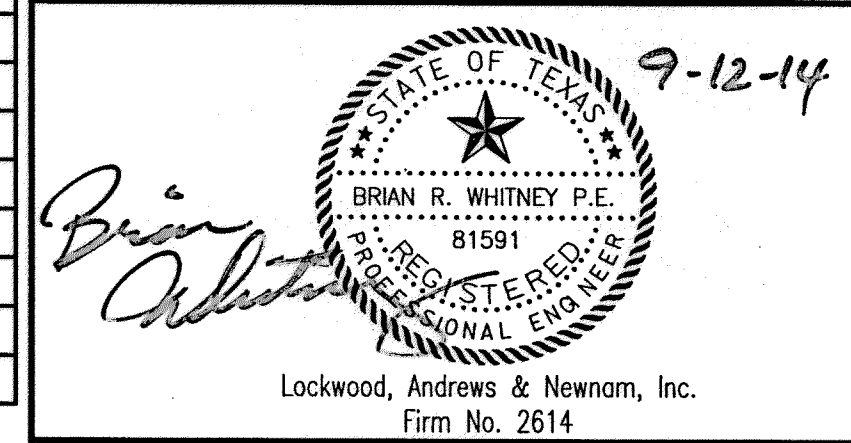
WALL A MODULAR BLOCK SUMMARY

LAYER	BASE ELEVATION (FT)	NO. OF BLOCKS	TYPE	STARTING STATION	ENDING STATION	LENGTH (FT)
14	84.50	134	28" (9"o/s)	-0+55.5	4+59.6	515.1
13	83.00	132.5	41" (9"o/s)	-0+51.6	4+57.7	509.3
12	81.50	129.5	41" (9"o/s)	-0+46.3	4+51.5	497.8
11	80.00	126	41" (9"o/s)	-0+40.2	4+44.1	484.3
10	78.50	123.5	41" (9"o/s)	-0+34.3	4+40.4	474.7
9	77.00	120	41" (9"o/s)	-0+26.6	4+34.7	461.3
8	75.50	117	41" (9"o/s)	-0+20.7	4+29.0	449.7
7	74.00	114.5	41" (9"o/s)	-0+15.1	4+25.0	440.1
6	72.50	111	41" (9"o/s)	-0+1.6	4+25.1	426.7
5	71.00	110.5	41" (9"o/s)	-0+1.6	4+23.1	424.7
4	69.50	104.5	41" (9"o/s)	-0+1.6	4+00.1	401.7
3	68.00	104.5	41" (9"o/s)	-0+1.6	4+00.1	401.7
2	66.50	104.5	41" (std)	-0+1.6	4+00.1	401.7
1	65.00	104.5	60" (std)	-0+1.6	4+00.1	401.7

WALL B MODULAR BLOCK SUMMARY

LAYER	BASE ELEVATION (FT)	NO. OF BLOCKS	TYPE	STARTING STATION	ENDING STATION	LENGTH (FT)
4	69.50	42.5	41" (9"o/s)	4+00.0	5+63.4	163.4
3	68.00	42	41" (9"o/s)	4+00.0	5+61.4	161.4
2	66.50	41.5	41" (std)	4+00.0	5+59.5	159.5
1	65.00	3.5	60" (std)	4+00.0	4+13.5	13.5

- NOTES:**
- GRAVITY WALL DIMENSIONS BASED ON USING AN 18" THICK BLOCK WITH A 9" OFFSET PER EACH LAYER. WALLS TALLER THAN 12- FEET REQUIRE A 60-INCH DEEP BOTTOM BLOCK. SEE CROSS SECTIONS.
  - CONTRACTOR SHALL SUBMIT SEALED WALL BLOCK DESIGN CALCULATIONS, LAYOUTS, AND SECTIONS FOR REVIEW APPROVAL PRIOR TO CONSTRUCTION.
  - SEE WESTVIEW BASIN DETAILS



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEW A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3

WESTVIEW BASIN  
GRAVITY WALL  
LAYOUT (1 OF 3)

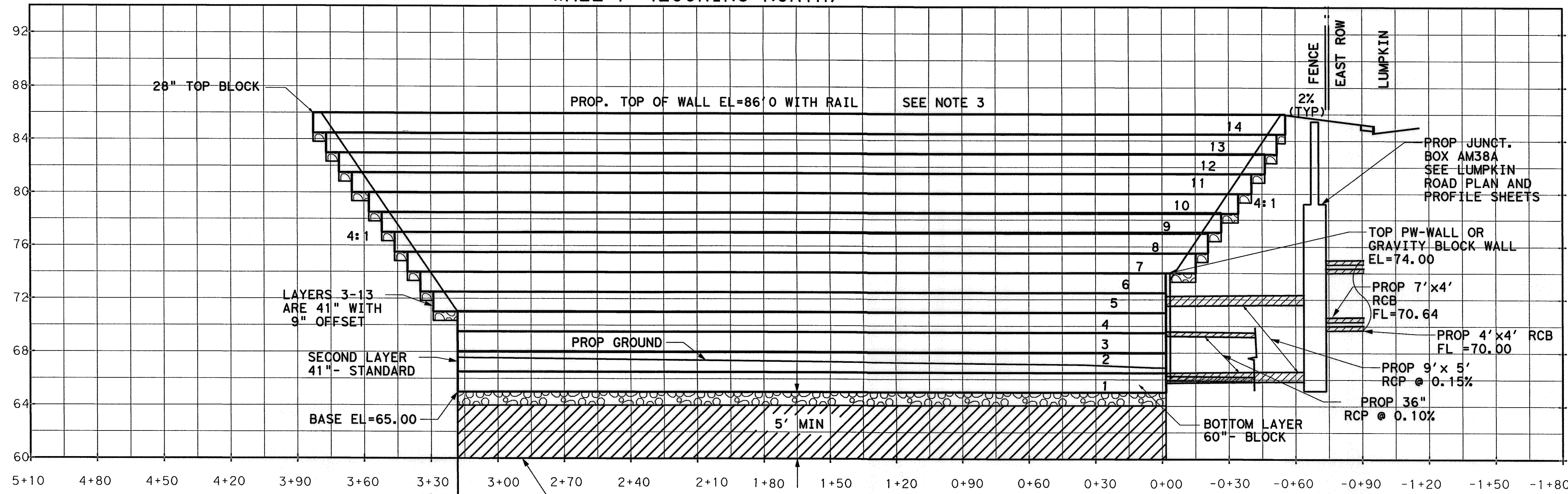
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO. 1	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT:		
HORZ:		
SHEET:		
40 OF 226		

APP: \_\_\_\_\_  
 REVISIONS: \_\_\_\_\_  
 No. DATE: \_\_\_\_\_  
 MUGurh-1e  
 105-28h.dbrm  
 BASKIN RETAINING WALL LAYOUT (1 OF 3)  
 4-01-Drainage\Drawings\40-001-WESTVIEW BASIN RETAINING WALL LAYOUT (1 OF 3).dwg



### WALL F (LOOKING NORTH)



### WALL F MODULAR BLOCK SUMMARY

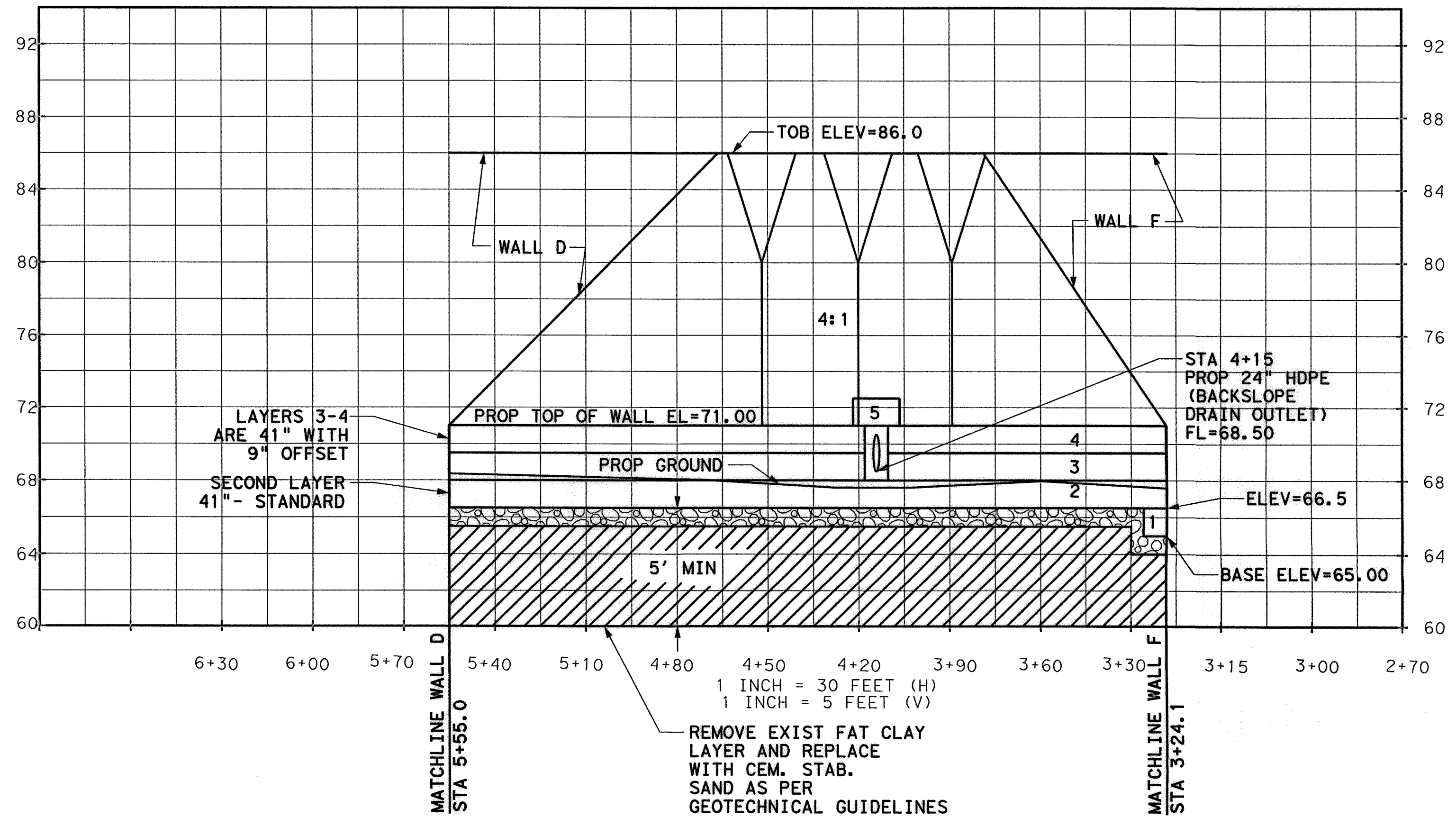
LAYER	BASE ELEVATION (FT)	NO. OF BLOCKS	TYPE	STARTING STATION	ENDING STATION	LENGTH (FT)
14	84.50	114	28" (9"/s)	-0+55.5	3+82.7	438.2
13	83.00	111.5	41" (9"/s)	-0+51.6	3+77.0	428.6
12	81.50	108.5	41" (9"/s)	-0+46.3	3+70.7	417.0
11	80.00	105.5	41" (9"/s)	-0+40.2	3+65.3	405.5
10	78.50	102	41" (9"/s)	-0+34.3	3+57.8	392.1
9	77.00	98.5	41" (9"/s)	-0+26.6	3+52.0	378.6
8	75.50	95.5	41" (9"/s)	-0+20.7	3+46.4	367.1
7	74.00	93	41" (9"/s)	-0+15.1	3+40.4	355.5
6	72.50	87.5	41" (9"/s)	-0+1.6	3+34.7	336.3
5	71.00	86	41" (9"/s)	-0+1.6	3+29.0	330.6
4	69.50	85	41" (9"/s)	-0+1.6	3+25.1	326.7
3	68.00	85	41" (9"/s)	-0+1.6	3+25.1	326.7
2	66.50	85	41" (std)	-0+1.6	3+25.1	326.7
1	65.00	85	60" (std)	-0+1.6	3+25.1	326.7

### WALL E MODULAR BLOCK SUMMARY

LAYER	BASE ELEVATION (FT)	NO. OF BLOCKS	TYPE	STARTING STATION	ENDING STATION	LENGTH (FT)
5	71.00	4	41" (9"/s)	4+07.0	4+22.4	15.4
4	69.50	60.5	41" (9"/s)	3+24.1	5+56.6	232.5
3	68.00	60.5	41" (9"/s)	3+24.1	5+56.6	232.5
2	66.50	60.5	41" (std)	3+24.1	5+56.6	232.5
1	65.00	2	60" (std)	3+24.1	3+31.8	7.7

- NOTES:**
- GRAVITY WALL DIMENSIONS BASED ON USING AN 18" THICK BLOCK WITH A 9" OFFSET PER EACH LAYER. WALLS TALLER THAN 12- FEET REQUIRE A 60-INCH DEEP BOTTOM BLOCK. SEE CROSS SECTIONS.
  - CONTRACTOR SHALL SUBMIT SEALED WALL BLOCK DESIGN CALCULATIONS, LAYOUTS, AND SECTIONS FOR REVIEW APPROVAL PRIOR TO CONSTRUCTION.
  - SEE WESTVIEW BASIN DETAILS

### WALL E (LOOKING NORTH)



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3

WESTVIEW BASIN  
GRAVITY WALL  
LAYOUT (2 OF 3)

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

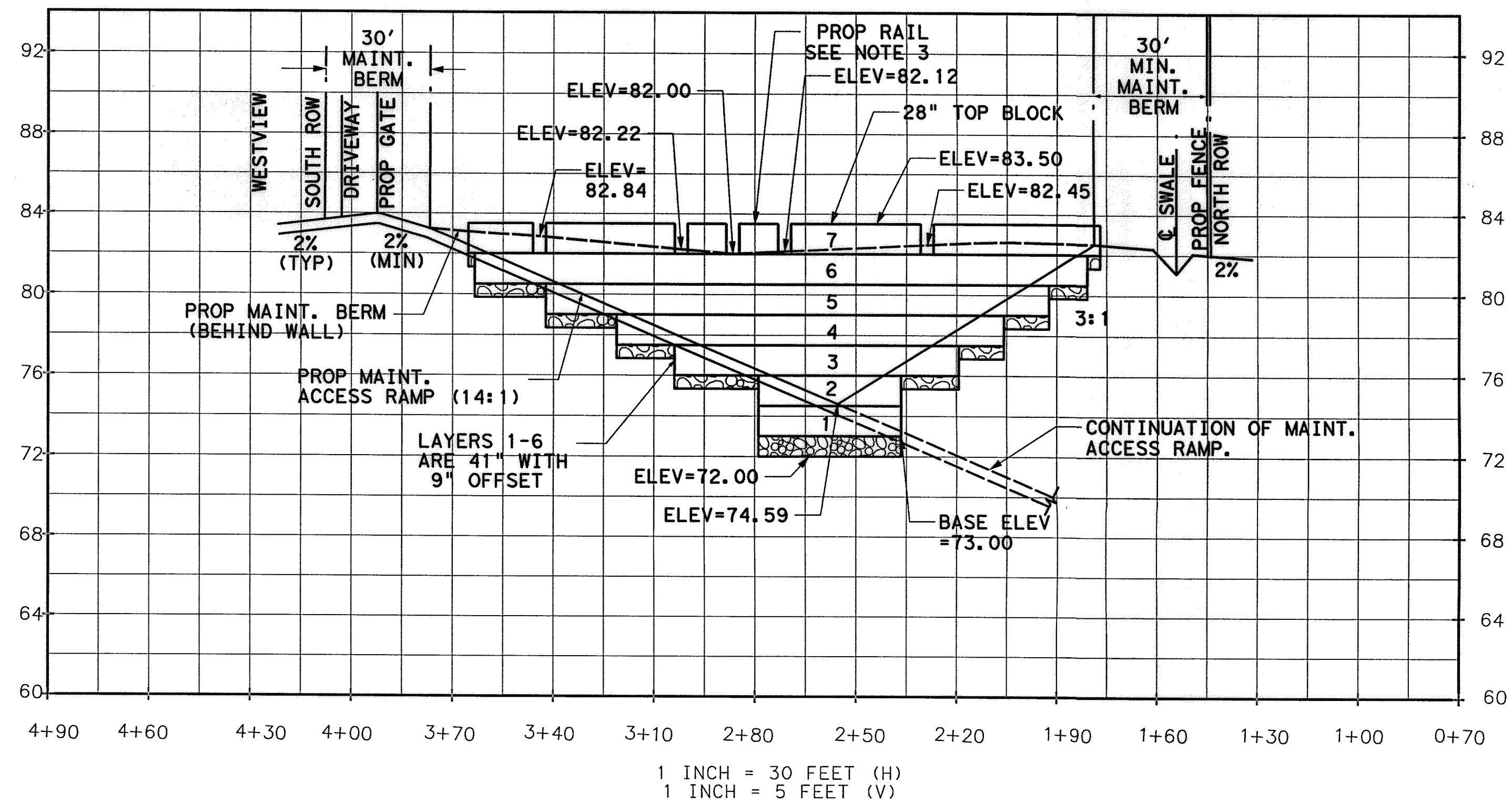
FILE NO.: \_\_\_\_\_ FACILITY: \_\_\_\_\_

DRAWING SCALE: \_\_\_\_\_ CITY DRG NO. \_\_\_\_\_

VERT: \_\_\_\_\_ HORZ: \_\_\_\_\_ SHEET: \_\_\_\_\_

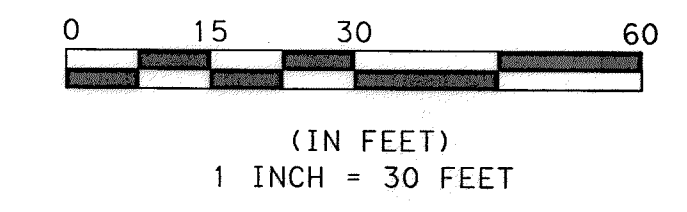
41 OF 226

### WALL C (LOOKING WEST)



#### LEGEND

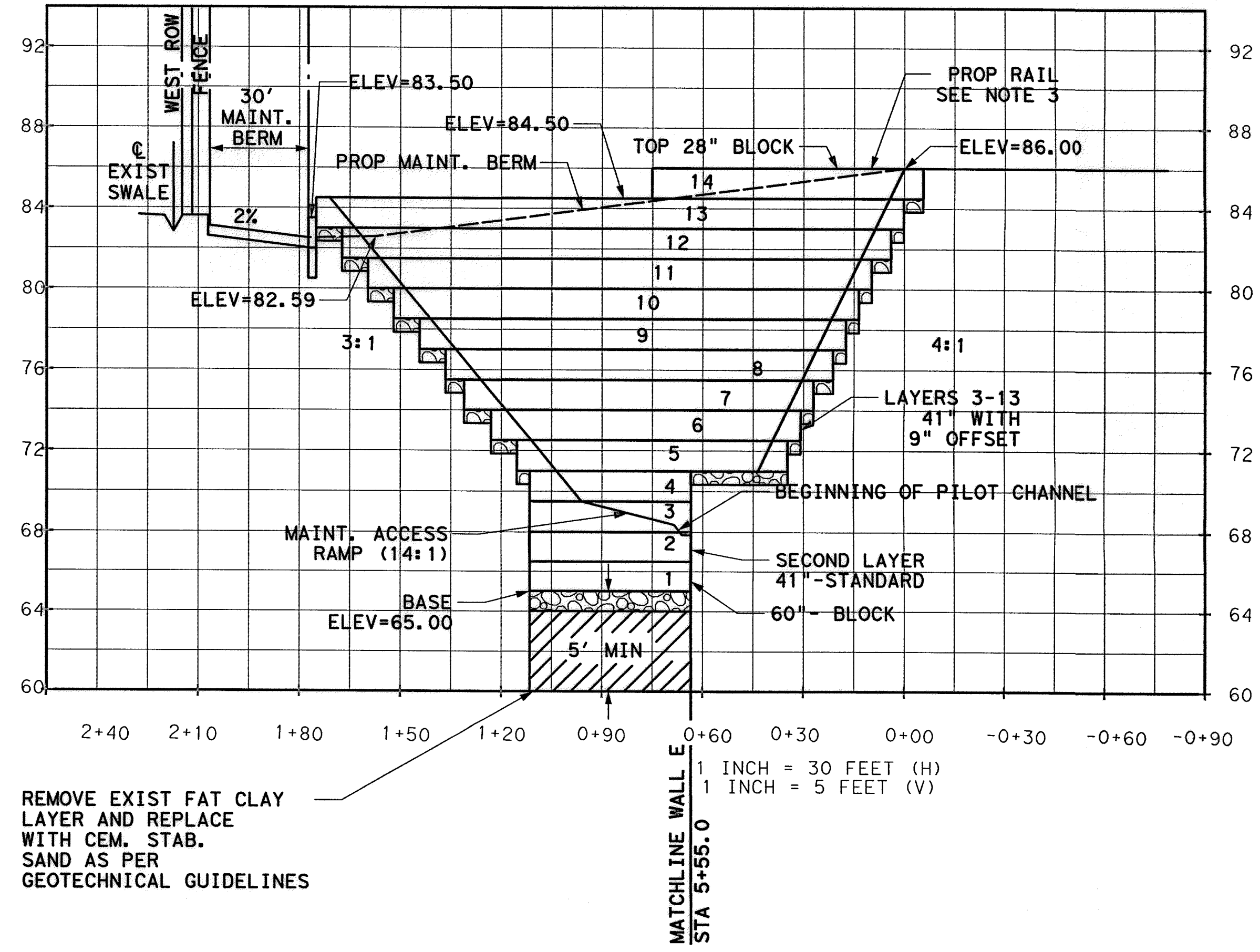
- CRUSHED STONE BACKFILL
- PROP. CEM. STAB. SAND



#### WALL C MODULAR BLOCK SUMMARY

LAYER	BASE ELEVATION (FT)	NO. OF BLOCKS	TYPE	STARTING STATION	ENDING STATION	LENGTH (FT)
7	82.00	49	28" (9"o/s)	1+77.0	3+65.3	188.3
6	80.50	47.5	41" (9"o/s)	1+80.8	3+63.4	182.6
5	79.00	39	41" (9"o/s)	1+92.3	3+42.2	149.9
4	77.50	30	41" (9"o/s)	2+05.8	3+21.1	115.3
3	76.00	22	41" (9"o/s)	2+19.2	3+03.8	84.6
2	74.50	11	41" (9"o/s)	2+36.5	2+78.8	42.3
1	73.00	11	41" (9"o/s)	2+36.5	2+78.8	42.3

### WALL D (LOOKING NORTH)



#### WALL D MODULAR BLOCK SUMMARY

LAYER	BASE ELEVATION (FT)	NO. OF BLOCKS	TYPE	STARTING STATION	ENDING STATION	LENGTH (FT)
14	84.50	21	28" (9"o/s)	-0+5.7	0+75.1	80.7
13	83.00	45.5	41" (9"o/s)	0+0.1	1+75.0	174.9
12	81.50	42.5	41" (9"o/s)	0+4.0	1+67.3	163.4
11	80.00	39	41" (9"o/s)	0+9.7	1+59.6	149.9
10	78.50	36	41" (9"o/s)	0+13.6	1+51.9	138.4
9	77.00	33	41" (9"o/s)	0+17.4	1+44.2	126.8
8	75.50	30	41" (9"o/s)	0+21.2	1+36.6	115.3
7	74.00	27	41" (9"o/s)	0+27.0	1+30.8	103.8
6	72.50	24	41" (9"o/s)	0+30.9	1+23.1	92.3
5	71.00	21	41" (9"o/s)	0+34.7	1+15.4	80.7
4	69.50	12.5	41" (9"o/s)	0+63.4	1+11.4	48.0
3	68.00	12.5	41" (9"o/s)	0+63.4	1+11.4	48.0
2	66.50	12.5	41" (std)	0+63.4	1+11.4	48.0
1	65.00	12.5	60" (std)	0+63.4	1+11.4	48.0

#### NOTES:

1. GRAVITY WALL DIMENSIONS BASED ON USING AN 18" THICK BLOCK WITH A 9" OFFSET PER EACH LAYER. WALLS TALLER THAN 12- FEET REQUIRE A 60-INCH DEEP BOTTOM BLOCK. SEE CROSS SECTIONS.
2. CONTRACTOR SHALL SUBMIT SEALED WALL BLOCK DESIGN CALCULATIONS, LAYOUTS, AND SECTIONS FOR REVIEW APPROVAL PRIOR TO CONSTRUCTION.
3. SEE WESTVIEW BASIN DETAILS

9-12-14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

---

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

---

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

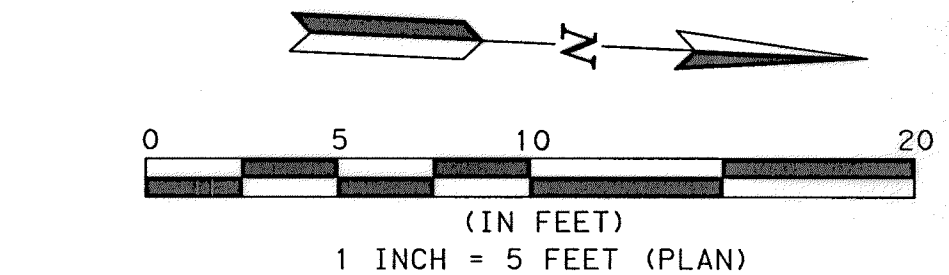
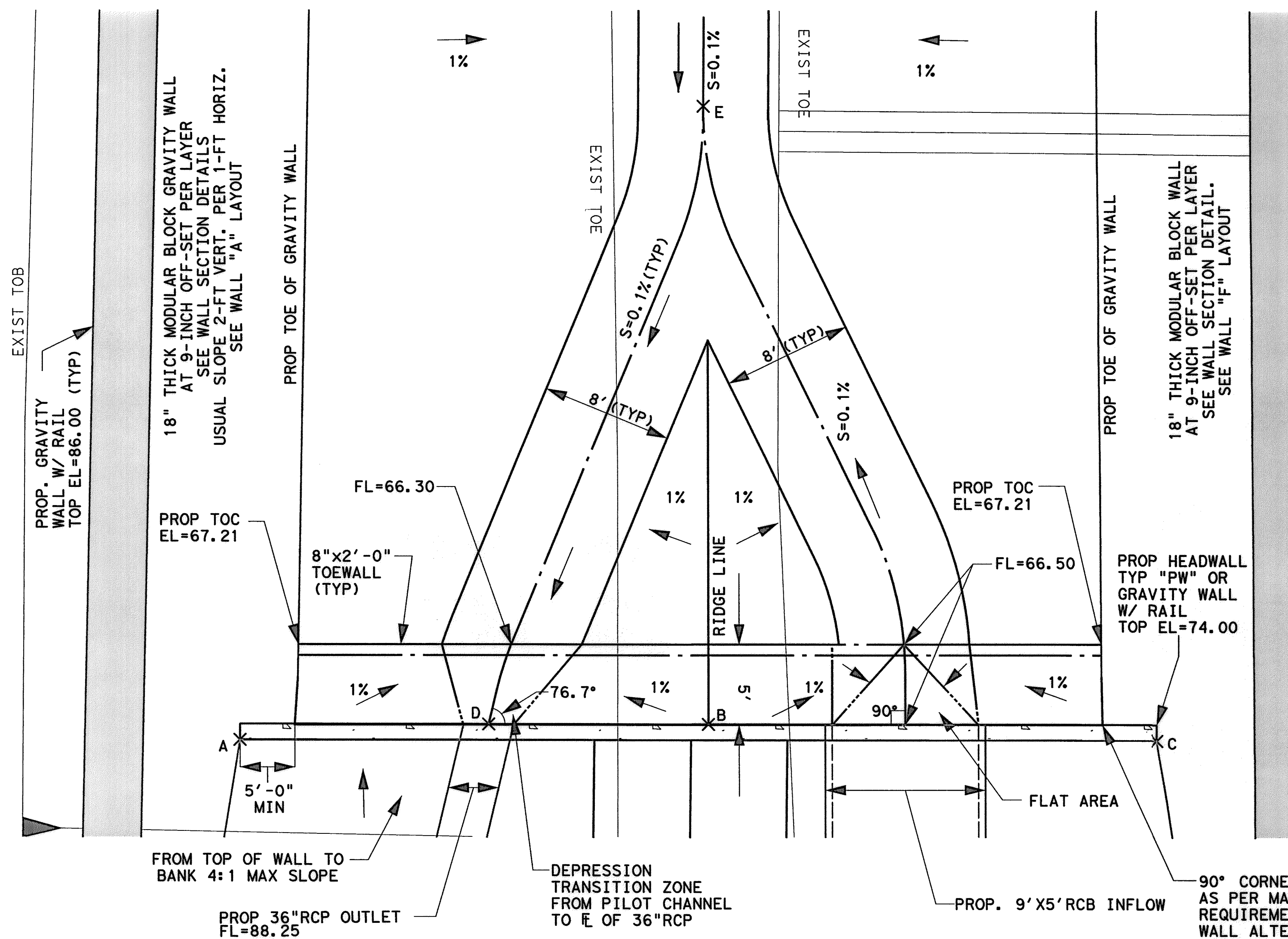
---

LUMPKIN ROAD  
N-T17000-0012-3  
WESTVIEW BASIN  
GRAVITY WALL  
LAYOUT (3 OF 3)

---

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

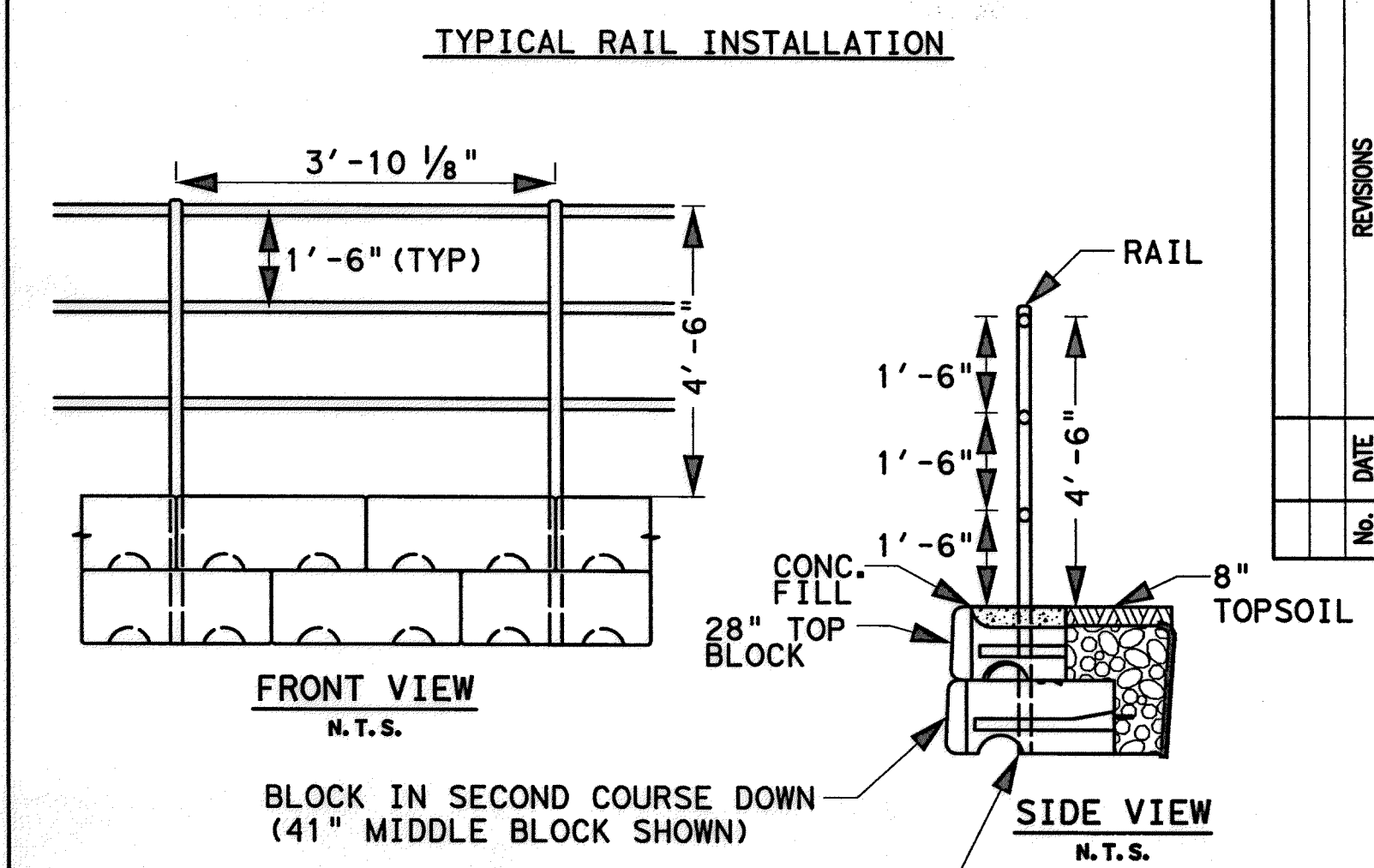
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT:		
HORZ:		
SHEET:	42 OF 226	



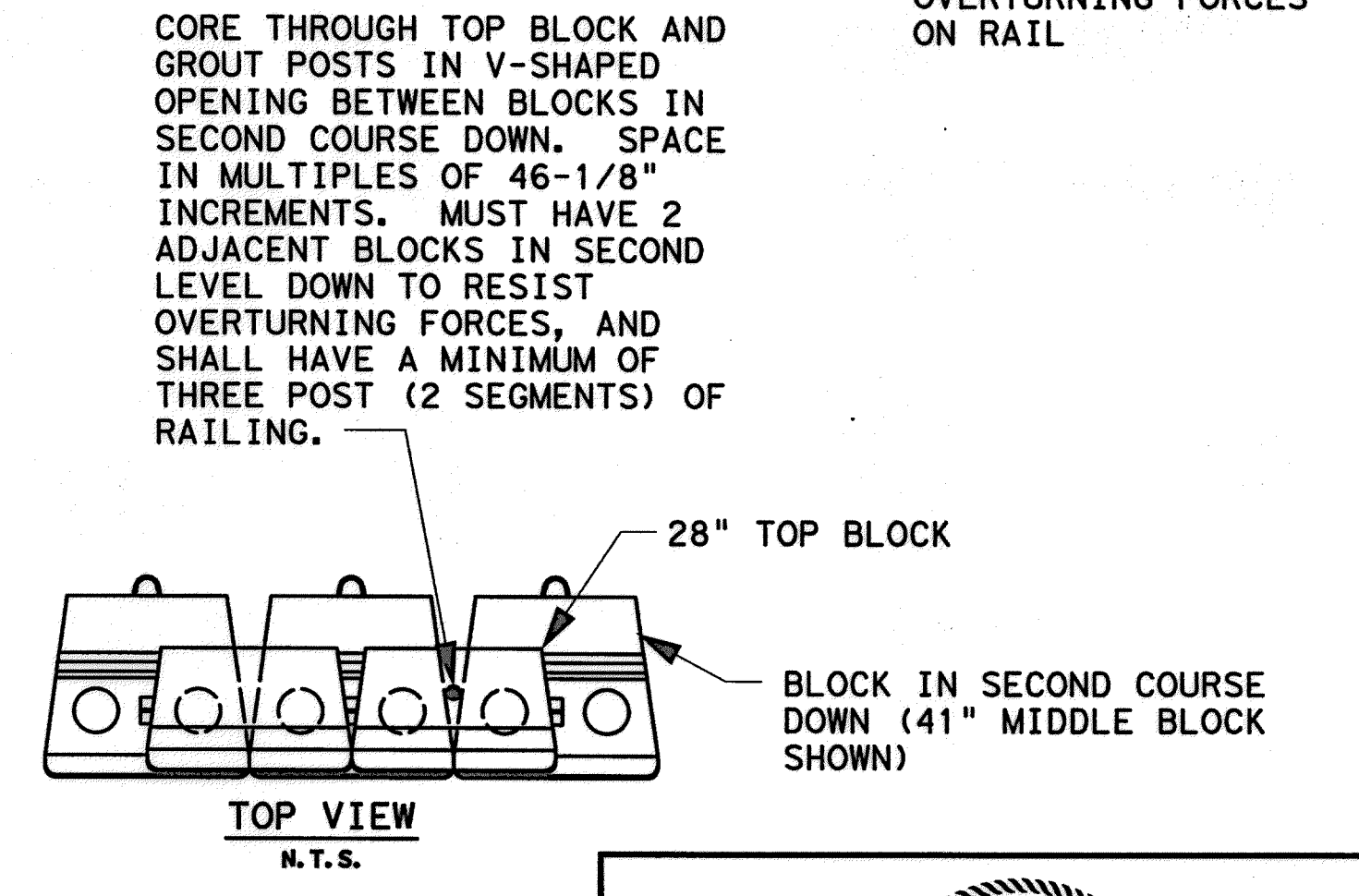
**COORDINATE TABLE**

PT	X	Y	Z
A	3060135.56	13853005.41	TOW 74.00
B	3060133.02	13853061.74	TOC 67.08
C	3060133.29	13853034.06	TOW 74.00
D	3060133.90	13853020.59	EL 66.25
E	3060095.20	13853032.06	EL 66.40
F	3060109.64	13853032.98	EL 66.90

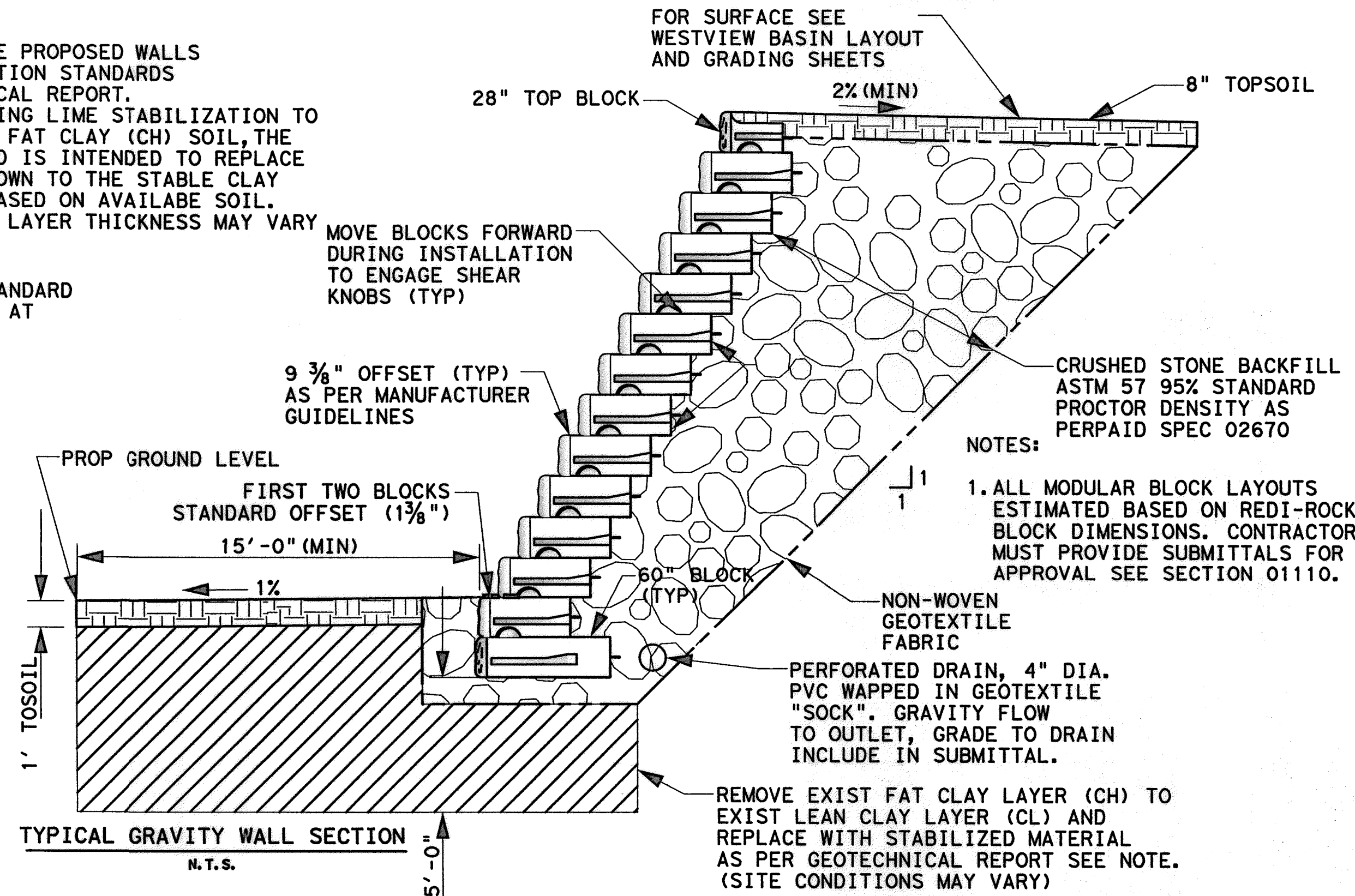
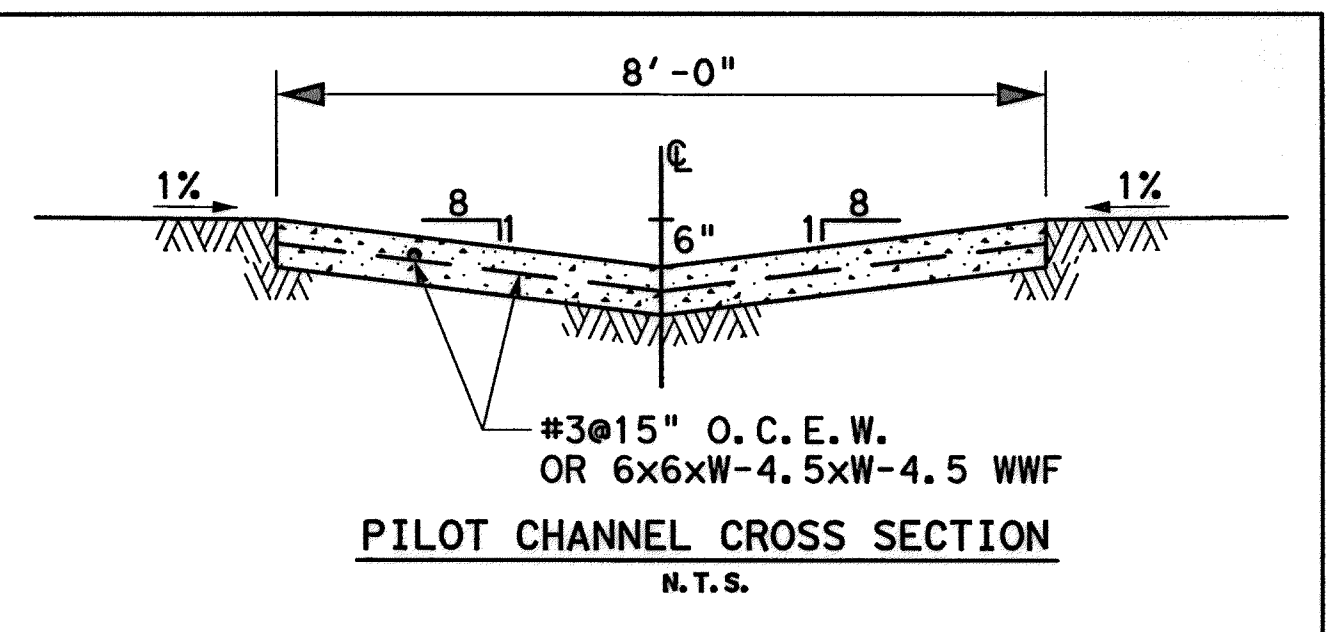
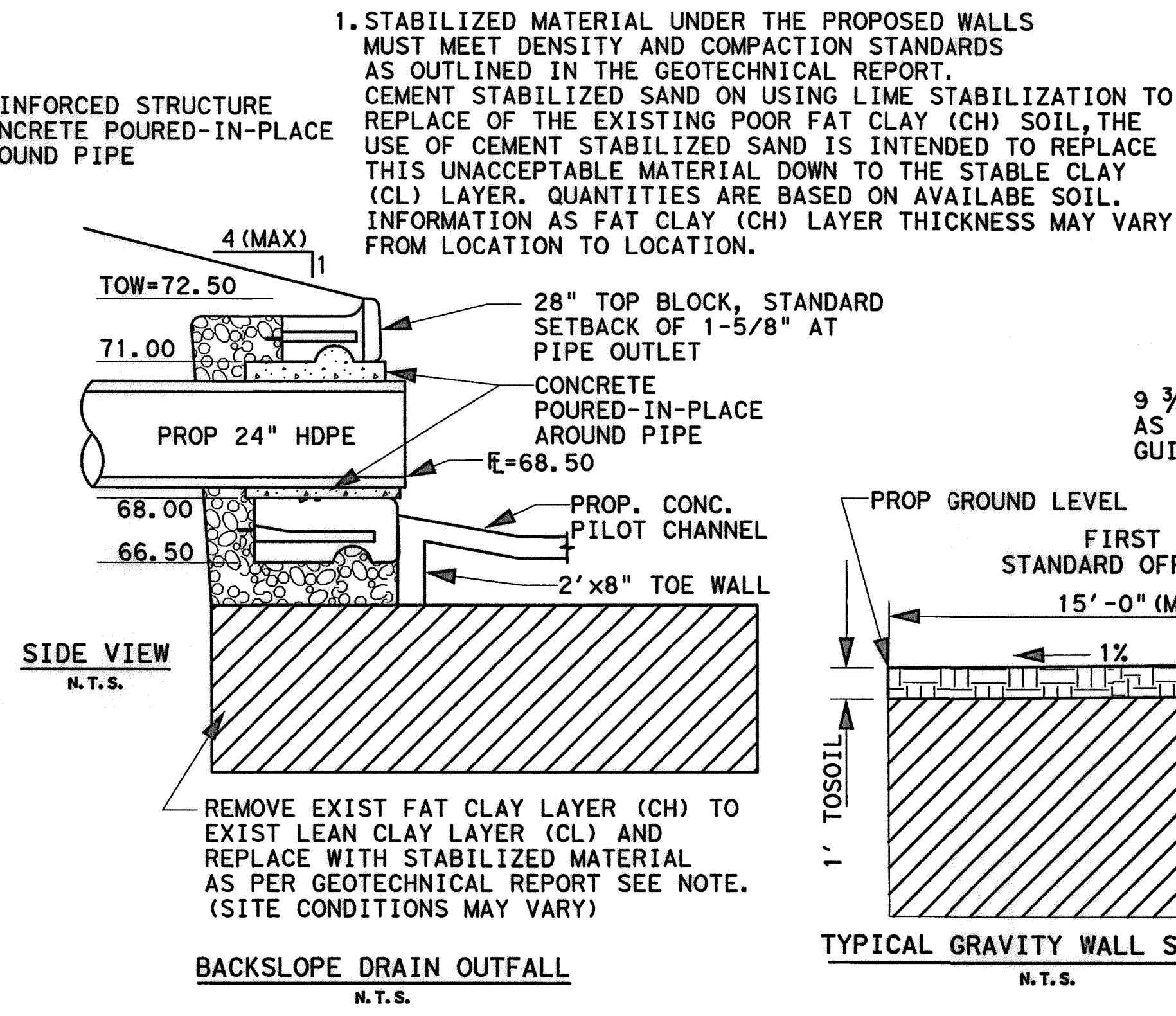
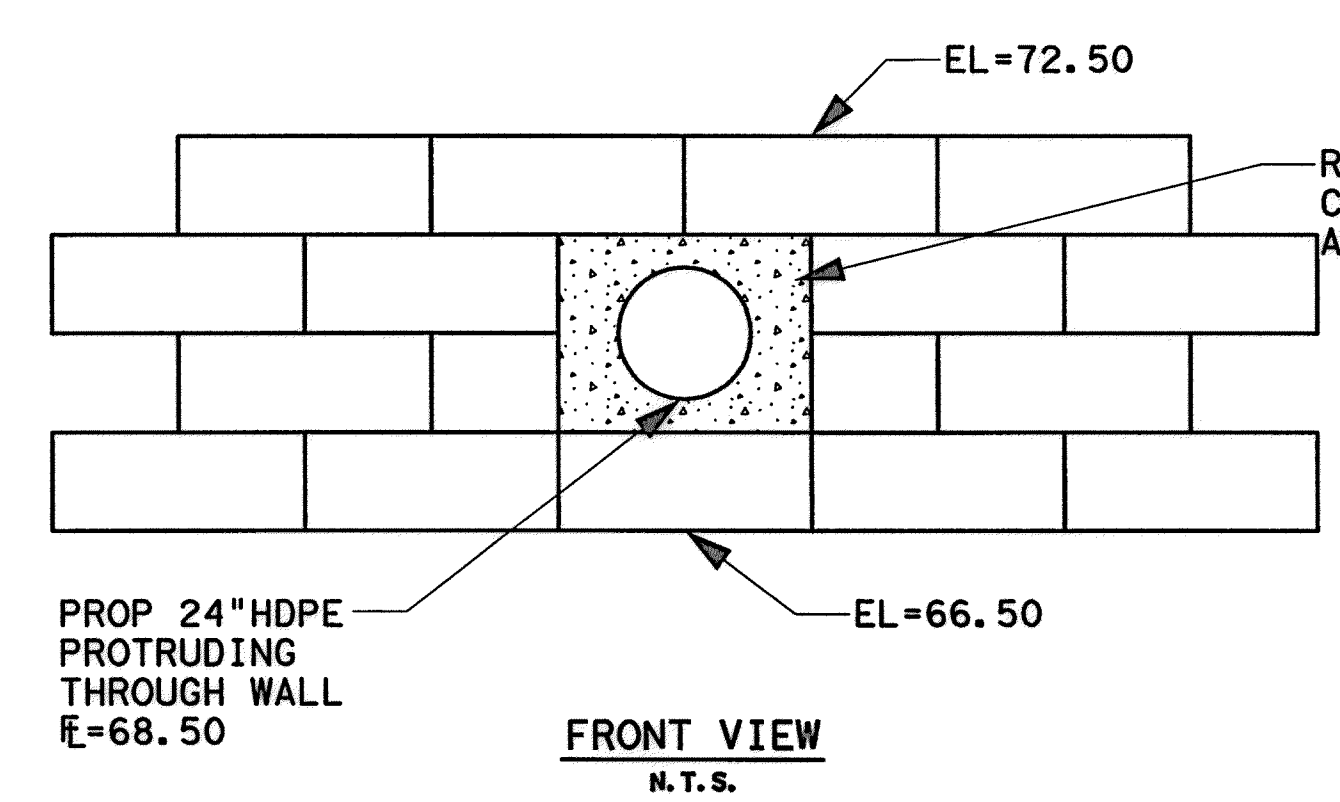
- NOTES:**
- CONTRACTOR TO PROVIDE FOR GRAVITY WALL AND ALL CONCRETE AREAS FOR APPROVAL PRIOR TO CONSTRUCTION.
  - COORDINATES AND ELEVATIONS SHOWN ARE APPROXIMATE AND SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF DIFFERENCES.
  - SEE WESTVIEW BASIN LAYOUT AND GRADING (2 OF 2) FOR ADDITIONAL INFORMATION.
  - ALL MODULAR BLOCK LAYOUTS ESTIMATED BASED ON REDI-ROCK BLOCK DIMENSIONS.



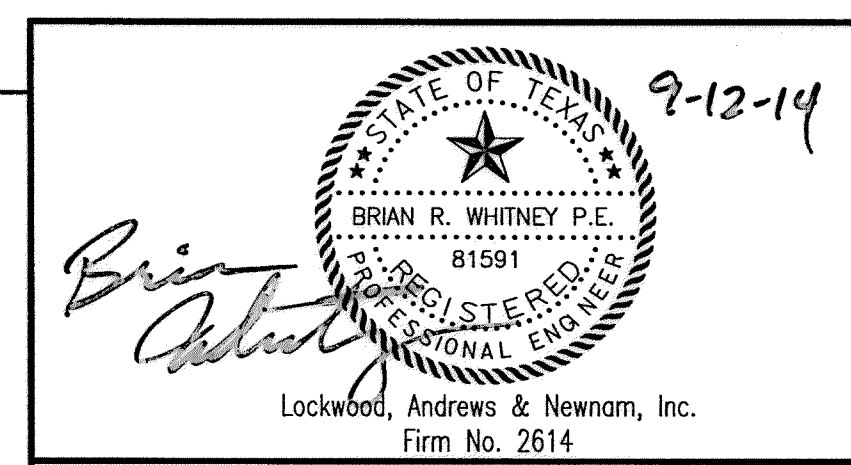
- NOTES:**
- THE PEDESTRIAN RAIL ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:
    - POST: 1/2 DIA (1.9" O.D) EXTRA STRONG PIPE AT 3'-10 1/8" MAXIMUM SPACING.
    - TOP AND INTERMEDIATE RAILS: 1/2" DIA. (1.9" O.D.) STANDARD PIPE AT 1'-6" SPACING.
    - ALL WELDED STEEL SHALL BE GROUND SMOOTH. COMPLETED RAILING SHALL BE HOT-DIP GALVANIZED.
    - PROVIDE 1'-0" "RETURNS" AT ENDS OF PEDESTRIAN RAILING (TYP).



- NOTES:**
- STABILIZED MATERIAL UNDER THE PROPOSED WALLS MUST MEET DENSITY AND COMPACTION STANDARDS AS OUTLINED IN THE GEOTECHNICAL REPORT. CEMENT STABILIZED SAND ON USING LIME STABILIZATION TO REPLACE OF THE EXISTING POOR FAT CLAY (CH) SOIL, THE USE OF CEMENT STABILIZED SAND IS INTENDED TO REPLACE THIS UNACCEPTABLE MATERIAL DOWN TO THE STABLE CLAY (CL) LAYER. QUANTITIES ARE BASED ON AVAILABLE SOIL. INFORMATION AS FAT CLAY (CH) LAYER THICKNESS MAY VARY FROM LOCATION TO LOCATION.



- NOTES:**
- ALL MODULAR BLOCK LAYOUTS ESTIMATED BASED ON REDI-ROCK BLOCK DIMENSIONS. CONTRACTOR MUST PROVIDE SUBMITTALS FOR APPROVAL SEE SECTION 01110.



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**



**LUMPKIN ROAD  
N-T17000-0012-3**

**WESTVIEW BASIN DETAILS**

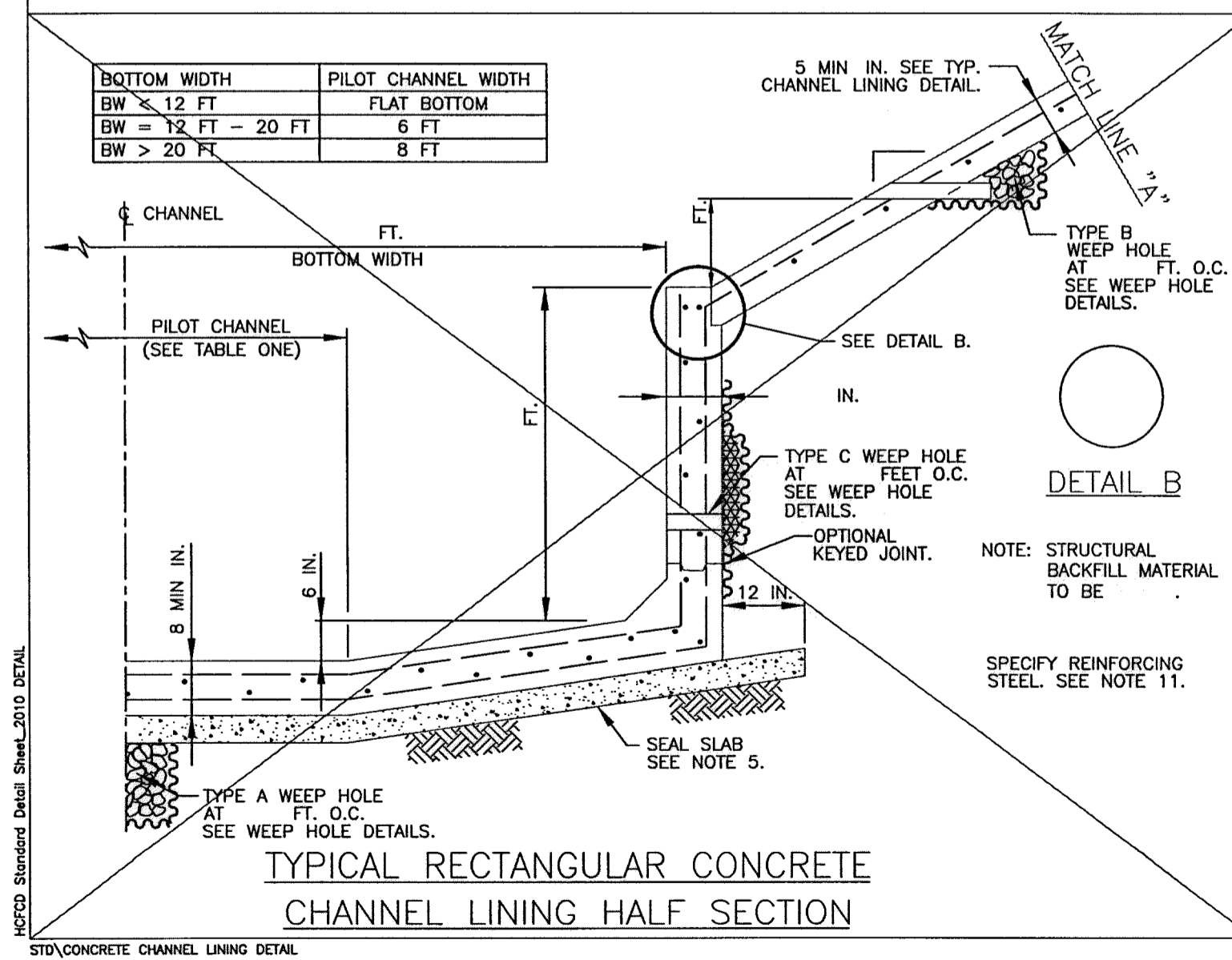
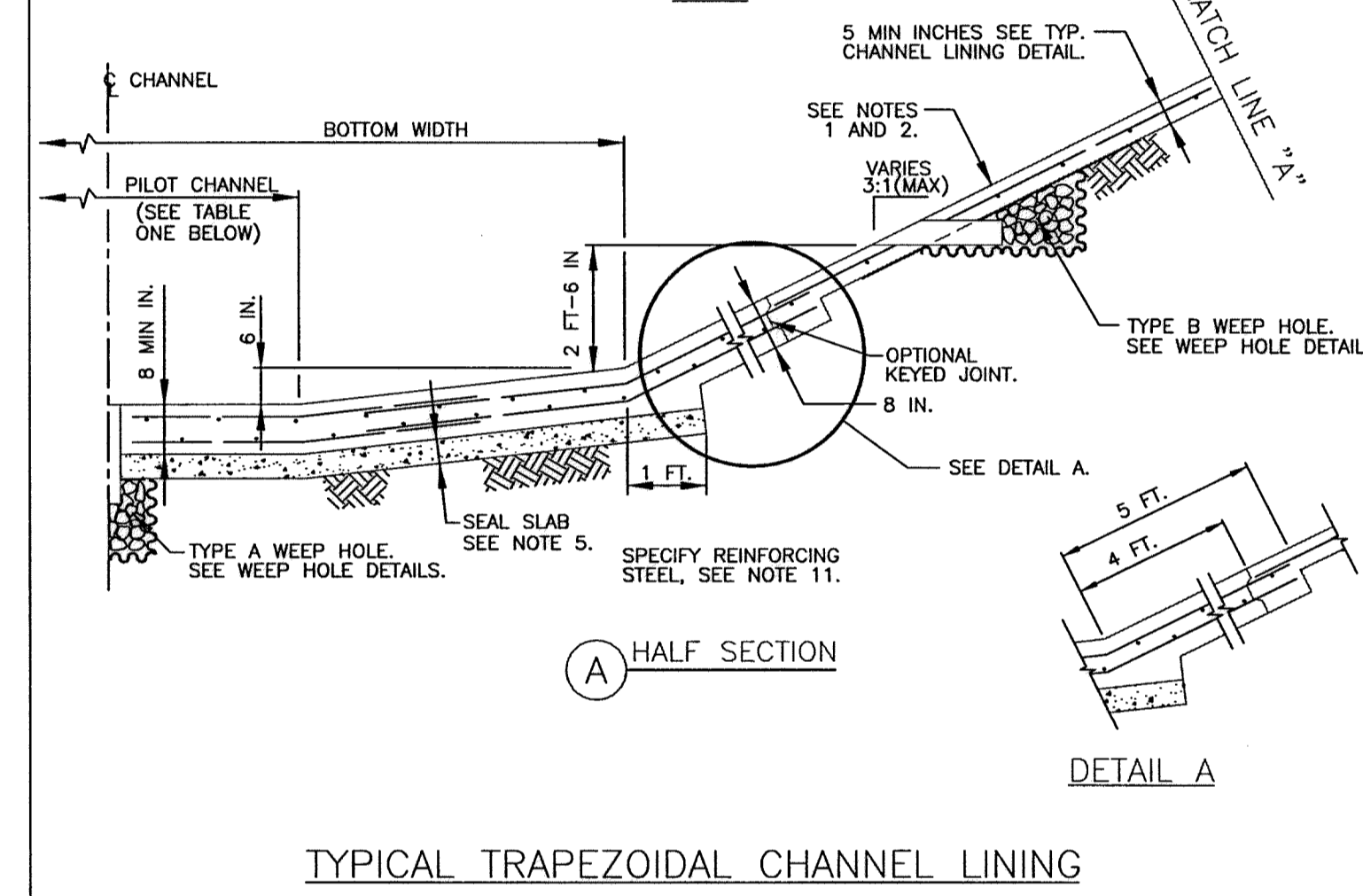
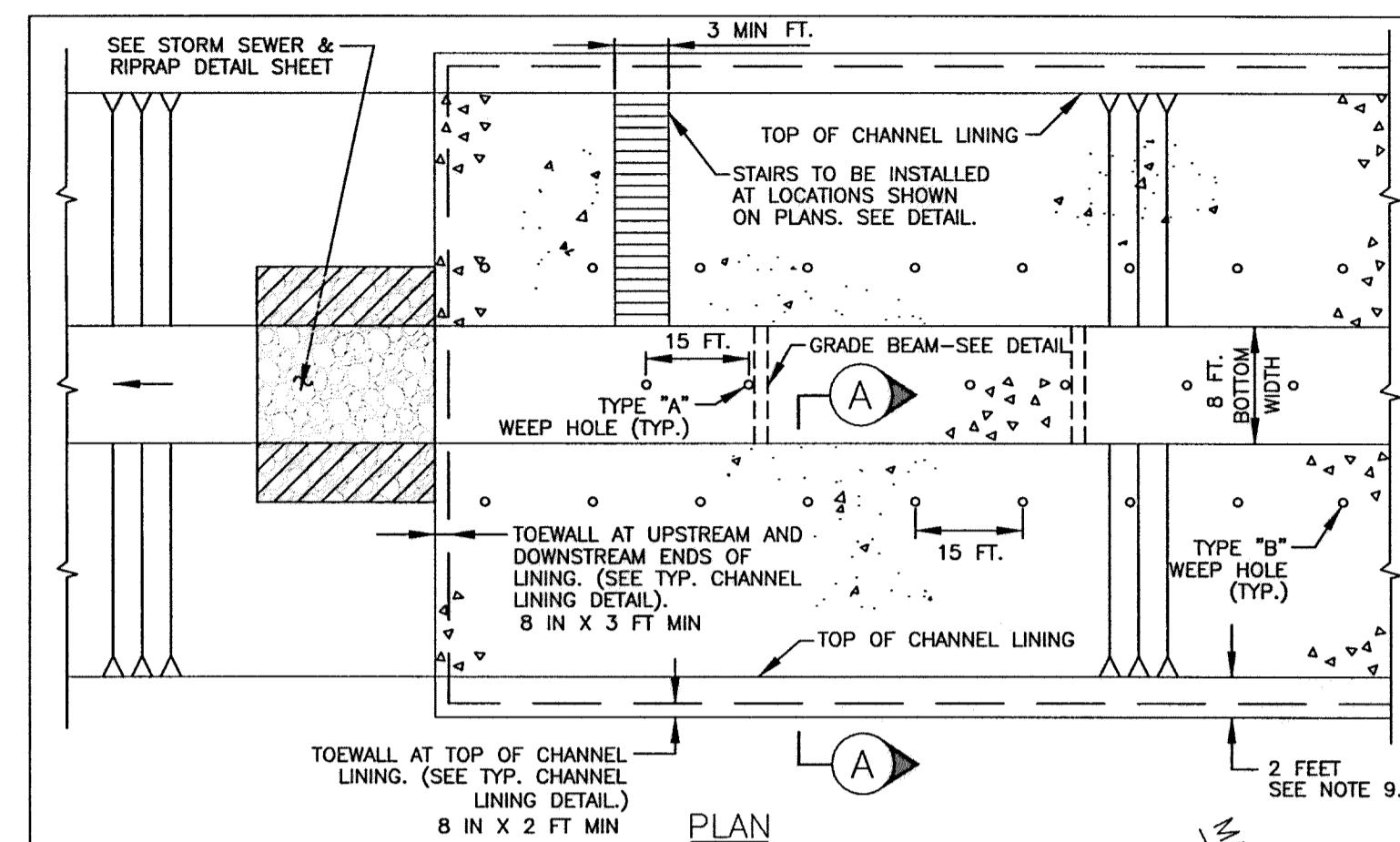
**CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING**

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DRG NO.
VERT:		SHEET:
HORZ:		
SHEET: 43 OF 226		

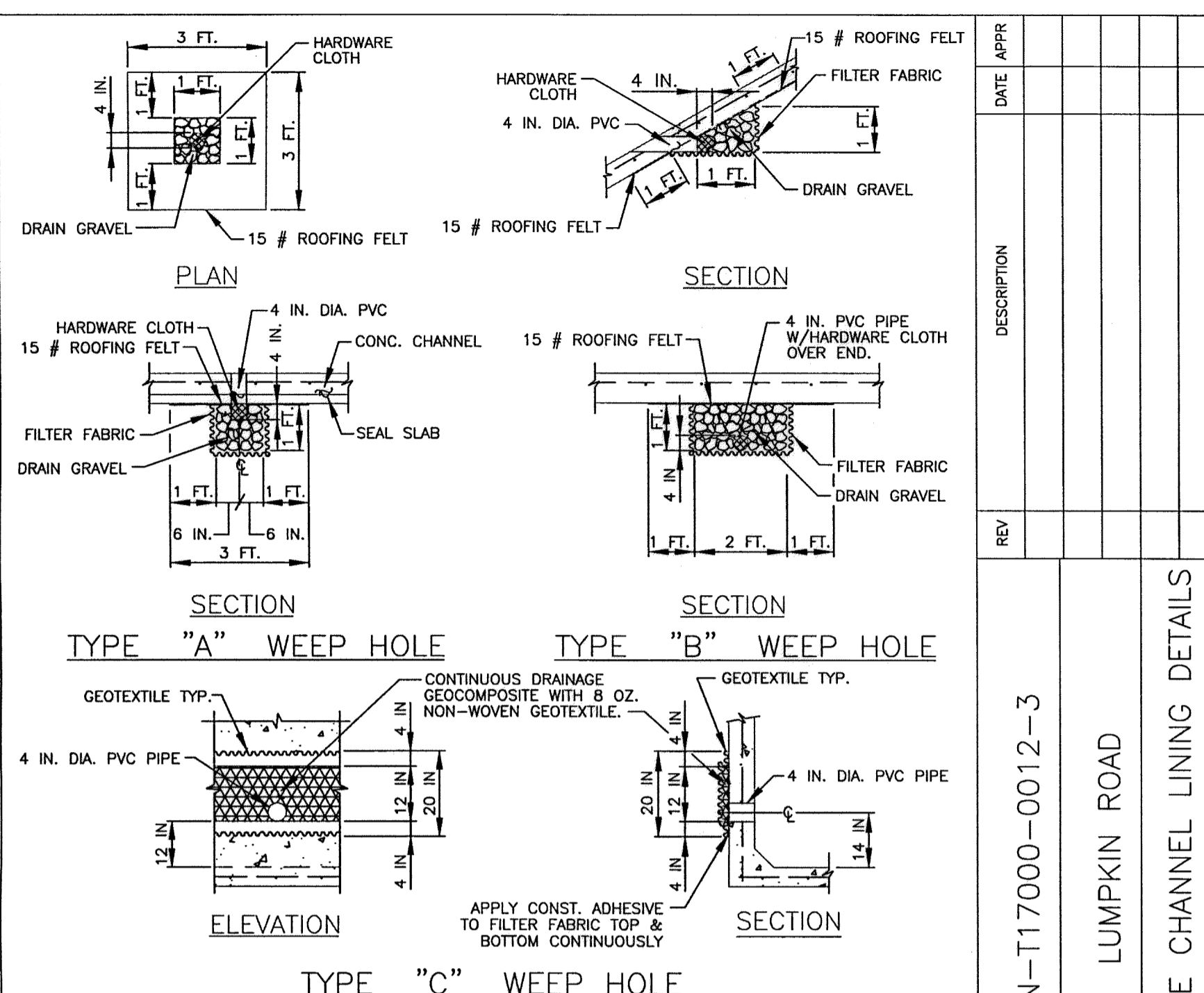
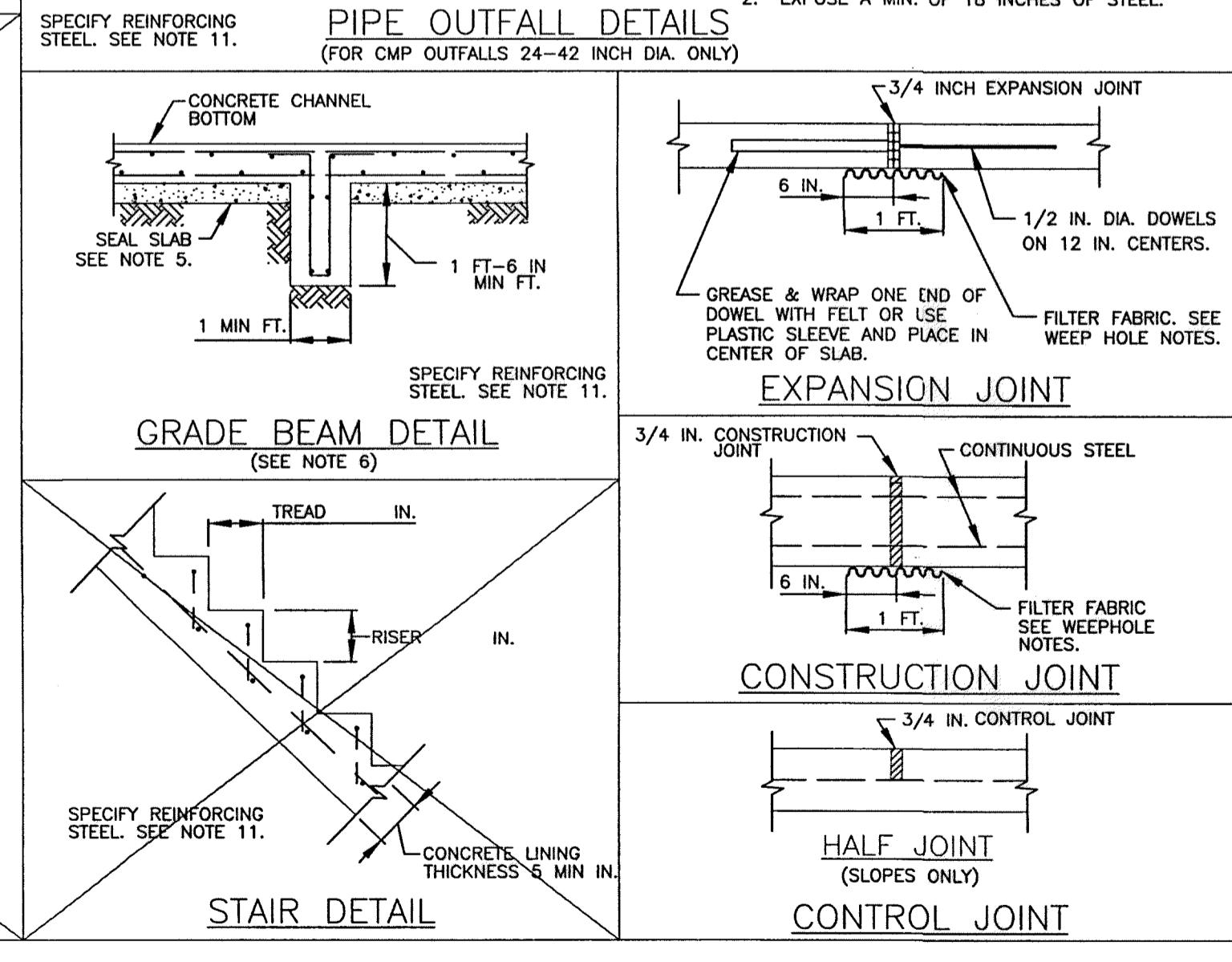
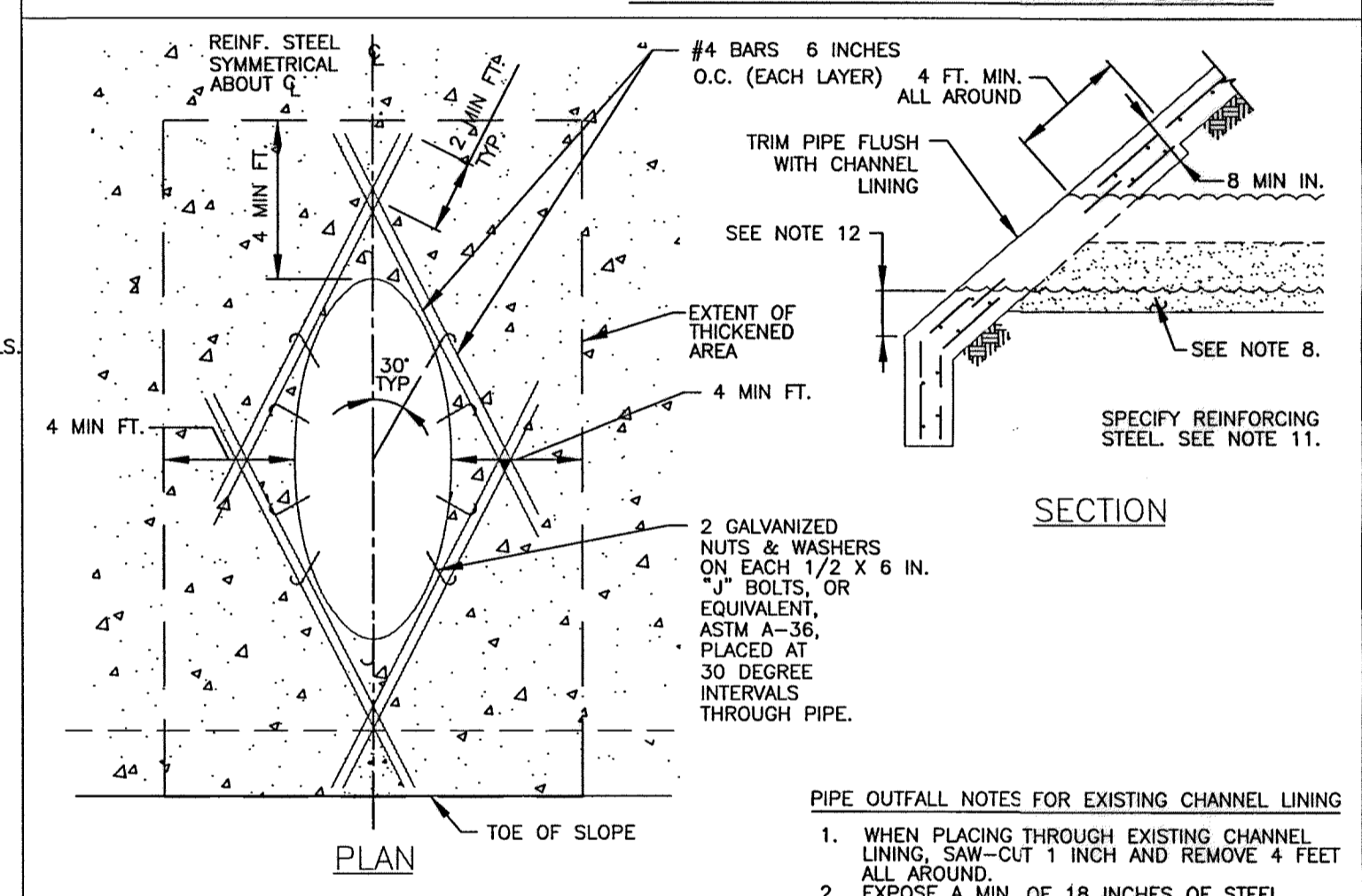
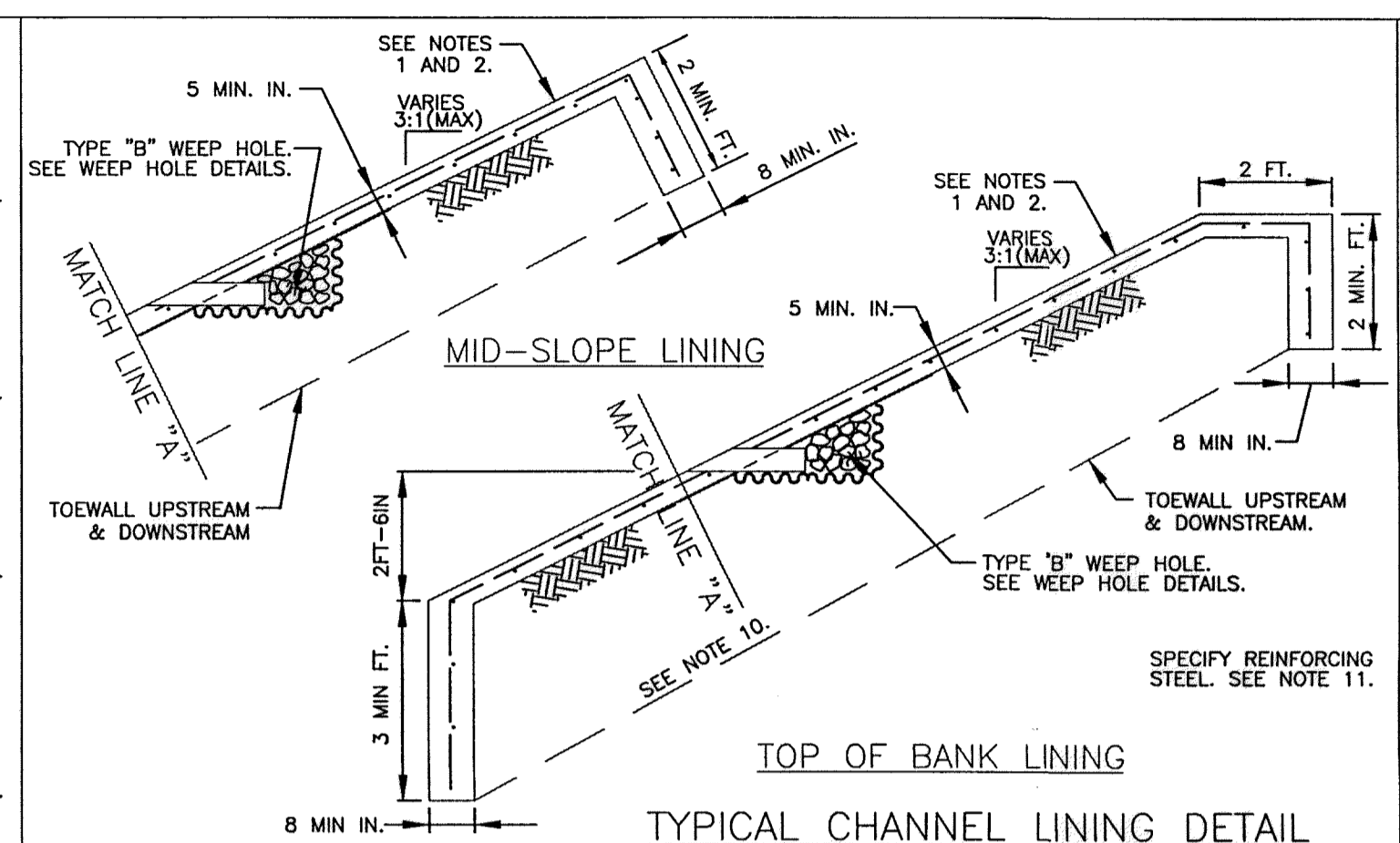
APP: \_\_\_\_\_  
 REVISIONS:  
 No. DATE  
 10/23/10 5:00 AM  
 M.Guthrie  
 130-10284-0011-4-0-Products\Projects\130-10284-0011-4-0-Products\Drawings\Drainage\43-001-WESTVIEW BASIN DETAILS.dwg(1/2014)

NO.	DATE	REVISIONS

MJD:urh-16  
2:28:59 PM  
pww\ladpw.ladco.in\proj\csw\lisa\Documents\Projects\130-10384-001\4-G-Product\Standards\Concrete Channel Lining Detail.dwg  
130-10384-001\4-G-Product\Standards\Concrete Channel Lining Detail.dwg



SD/CONCRETE CHANNEL LINING DETAIL



**WEEP HOLE NOTES:**

- MATERIALS:
  - a. PIPE: 4 INCH DIA. SCH. 40 PVC
  - b. DRAIN GRAVEL:
 

SIEVE SIZE	% FINER
1 IN	100
3/4 IN	70 - 100
3/8 IN	20 - 90
NO. 4	0 - 60
NO. 8	0
  - c. HARDWARE CLOTH:
 

MIN. OPEN	MAX. OPEN
1/8 IN	1/4 IN
  - d. FILTER FABRIC:
 

NON-WOVEN GEOTEXTILE	SIEVE NO.	MIN. AOS
100 MIN	100	
70 MAX	70	
6 OZ./SY	6 OZ. MIN	
- CUT WEEP HOLE PIPE FLUSH WITH CONCRETE SURFACE.
- TYPE "A" AND "C" WEEP HOLES FOR TYPICAL RECTANGULAR CONCRETE CHANNEL LINING. TO BE STAGGERED.

**CONCRETE CHANNEL LINING DETAILS NOTES:**

- STRUCTURAL CONCRETE FOR CONCRETE CHANNEL LINING AND NONSTRUCTURAL CONCRETE FOR SEAL SLAB SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION NO. 03310-CONCRETE.
- REINFORCING STEEL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION NO. 03310-CONCRETE.
- EXCAVATION AND BACKFILL FOR CONCRETE CHANNEL LINING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION NO. 02316-STRUCTURAL EXCAVATING AND BACKFILLING.
- RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION NO. 02378-RIPRAP AND GRANULAR FILL.
- A NON-REINFORCED 4 INCH MINIMUM NONSTRUCTURAL CONCRETE SEAL SLAB WILL BE REQUIRED BENEATH THE BOTTOM OF CONCRETE CHANNELS.
- STRUCTURAL CONCRETE GRADE BEAMS SHALL BE INSTALLED TRANSVERSELY AT 20 FOOT MAX. CENTERS ON CONCRETE LINED CHANNELS WITH BOTTOM WIDTHS EQUAL TO OR GREATER THAN 20 FEET.
- JOINTS:
  - PLACE CONSTRUCTION AND/OR EXPANSION JOINT IN CONCRETE LOW-FLOW AND TRAPEZOIDAL BOTTOM SECTIONS AT 20 FOOT MIN., 60 FOOT MAX. SPACING CONTINUOUSLY THROUGH CHANNEL LINING.
  - PLACE CONTROL JOINT ON SLOPES AT 20 FOOT SPACING.
- CEMENT STABILIZED SAND SHALL BE PROVIDED AND PLACED IN ACCORDANCE WITH SPECIFICATION SECTION NO. 02321-CEMENT STABILIZED SAND.
- DELETE 2 FT FLAT EDGE WHEN LINING IS BELOW TOP OF BANK. SEE MID-SLOPE LINING DETAIL.
- UPSTREAM AND DOWNSTREAM TOE WALL 3 FOOT MIN. DEPTH AT BOTTOM OF SLOPE AND 8 INCHES THICK.
- #4 AT 12 INCH O.C. MINIMUM OR EQUIVALENT WELDED WIRE FABRIC.
- VARIES BASED ON SIDE SLOPE. MINIMUM 1 FOOT VERTICAL AT TOE OF SLOPE.

THIS DETAIL SHEET HAS BEEN PREPARED FOR USE ON HCFCD PROJECTS OR PROJECTS TO BE MAINTAINED BY THE HCFCD WHEN COMPLETED BY OTHERS. AN ENGINEER WHO INCORPORATES THE DETAILS ON THIS SHEET BECOMES RESPONSIBLE FOR ITS USE IN THE END PRODUCT IN ACCORDANCE WITH RULE §137.33 (b) AND (c) OF THE TEXAS STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS.

PREPARED: N-117000-0012-3

CHECKED: LUMPKIN ROAD

APPROVED: CONCRETE CHANNEL LINING DETAILS

Lockwood, Andrews & Newnam, Inc. A LEAD A DALY COMPANY

9900 Northwest Freeway  
Houston, Texas 77092

DATE: 12-21-2010

SCALE: NTS

SHEET NUMBER OF

9-12-14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**LAN Lockwood, Andrews & Newnam, Inc.**  
A LEAD A DALY COMPANY

**LUMPKIN ROAD**  
N-117000-0012-3  
**CONCRETE CHANNEL LINING DETAILS**

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC

ST. & BRIDGE	STORMWATER	SWQ

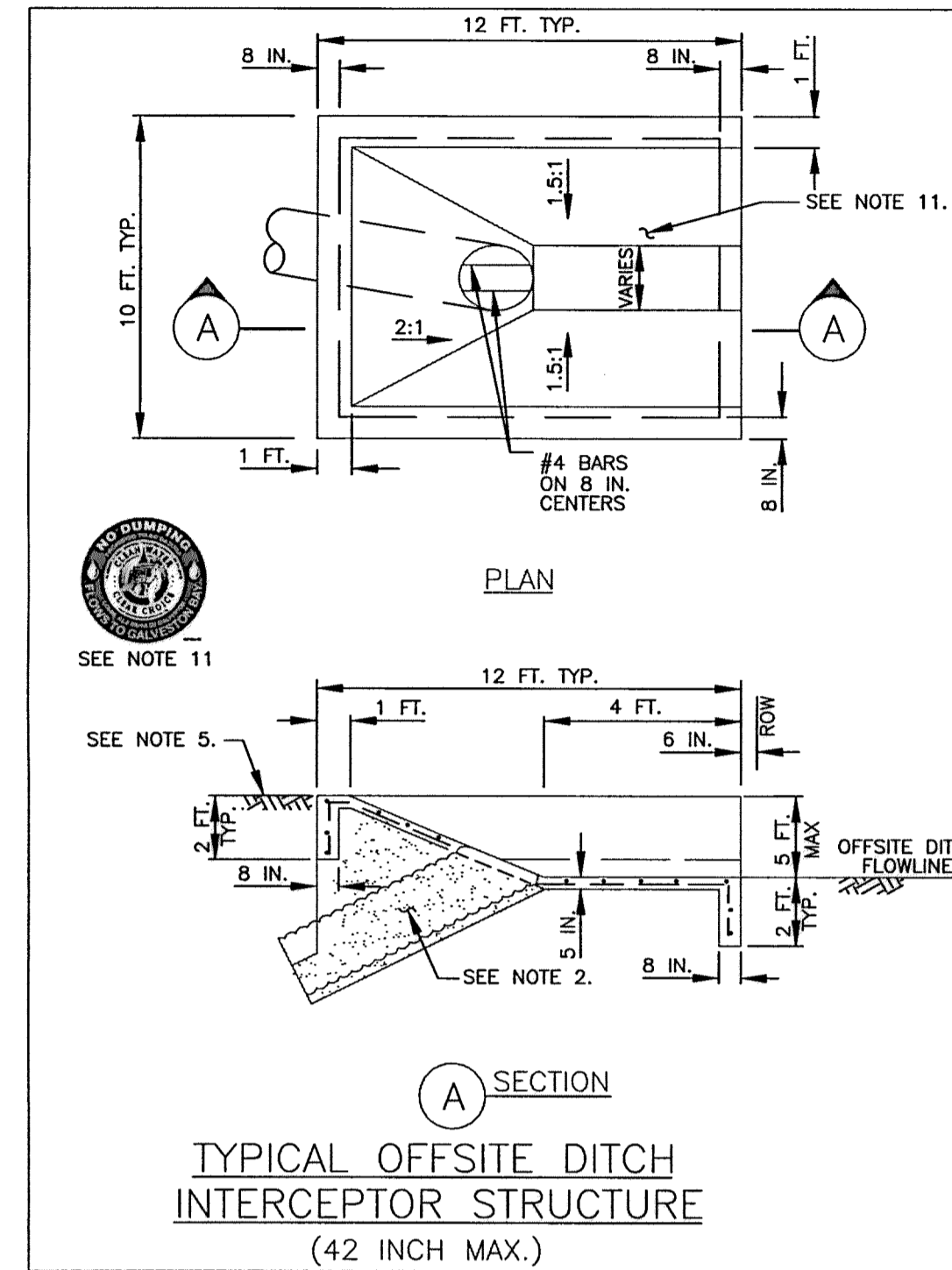
FILE NO.:

DRAWING SCALE:

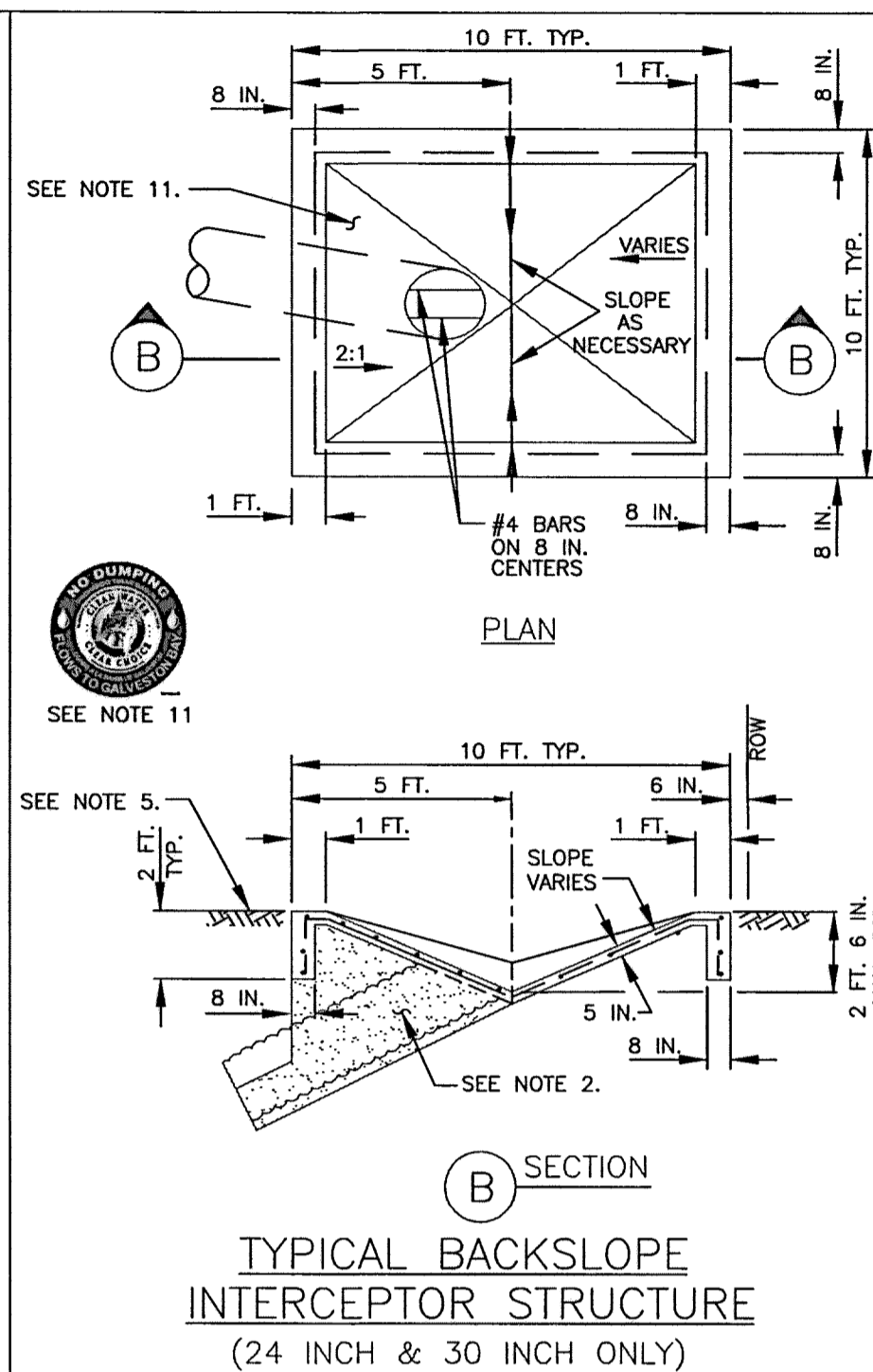
VERT: 1"=2'

HORZ: 1"=20'

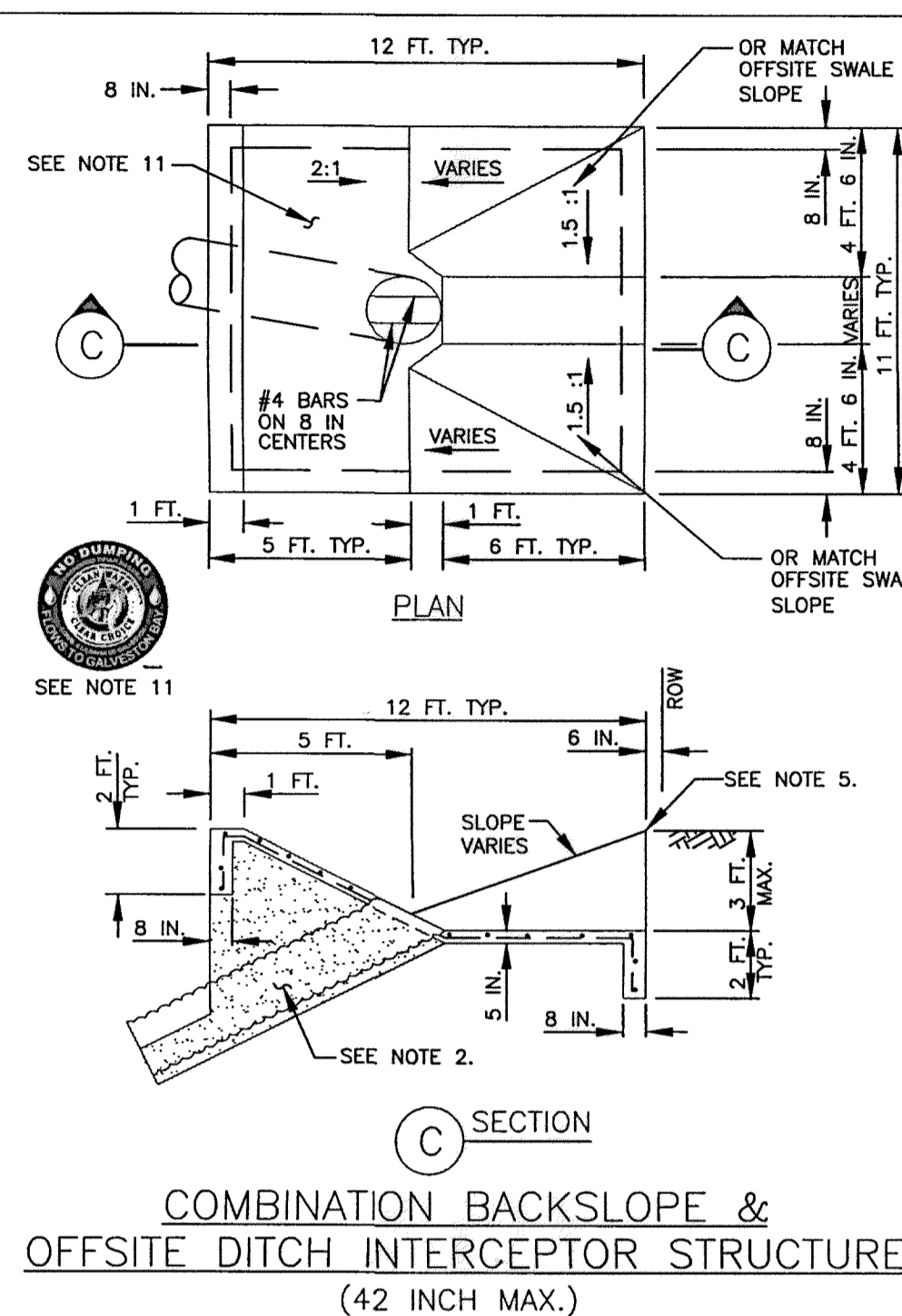
SHEET: 44 OF 226



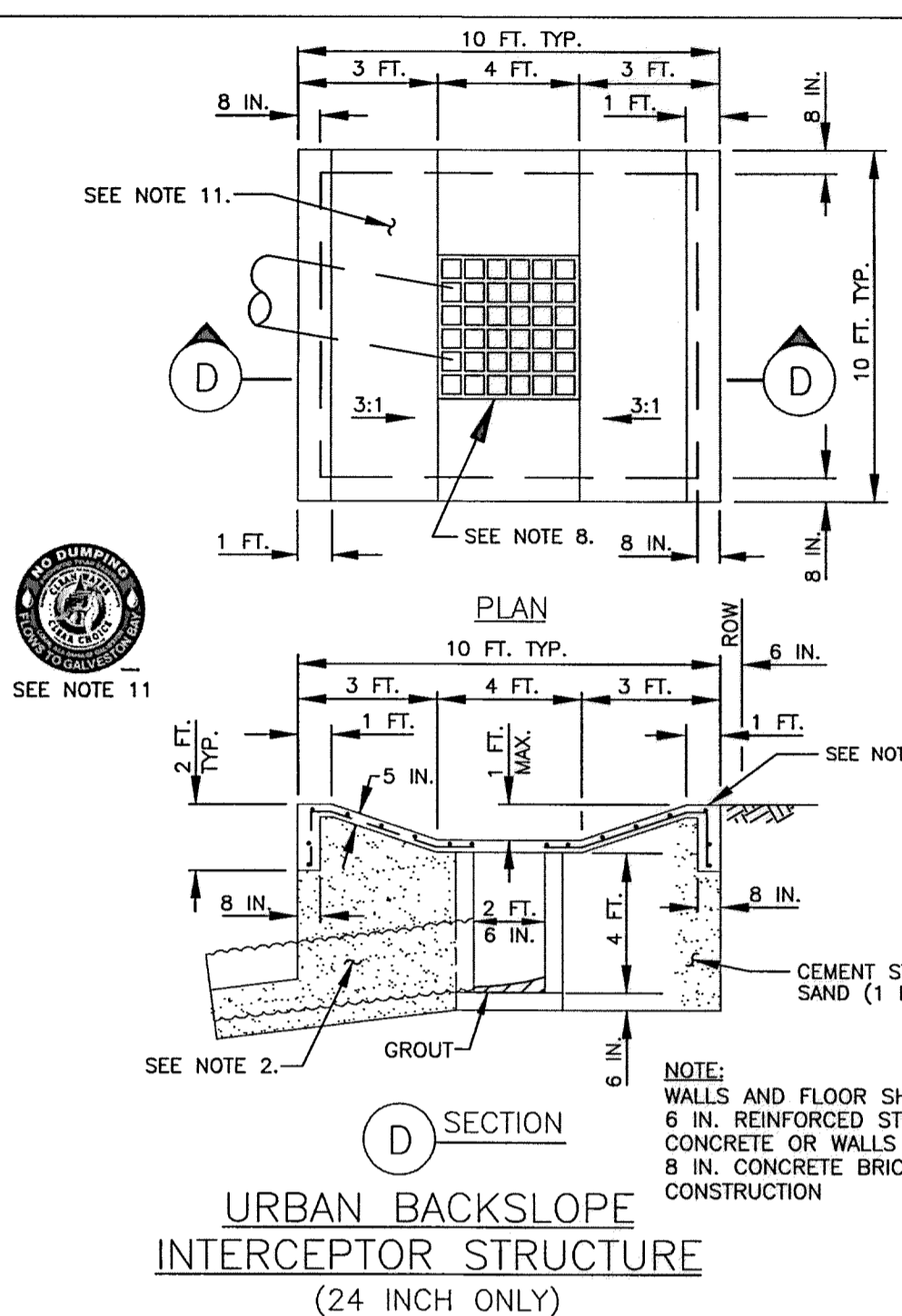
**A SECTION**  
TYPICAL OFFSITE DITCH INTERCEPTOR STRUCTURE (42 INCH MAX.)



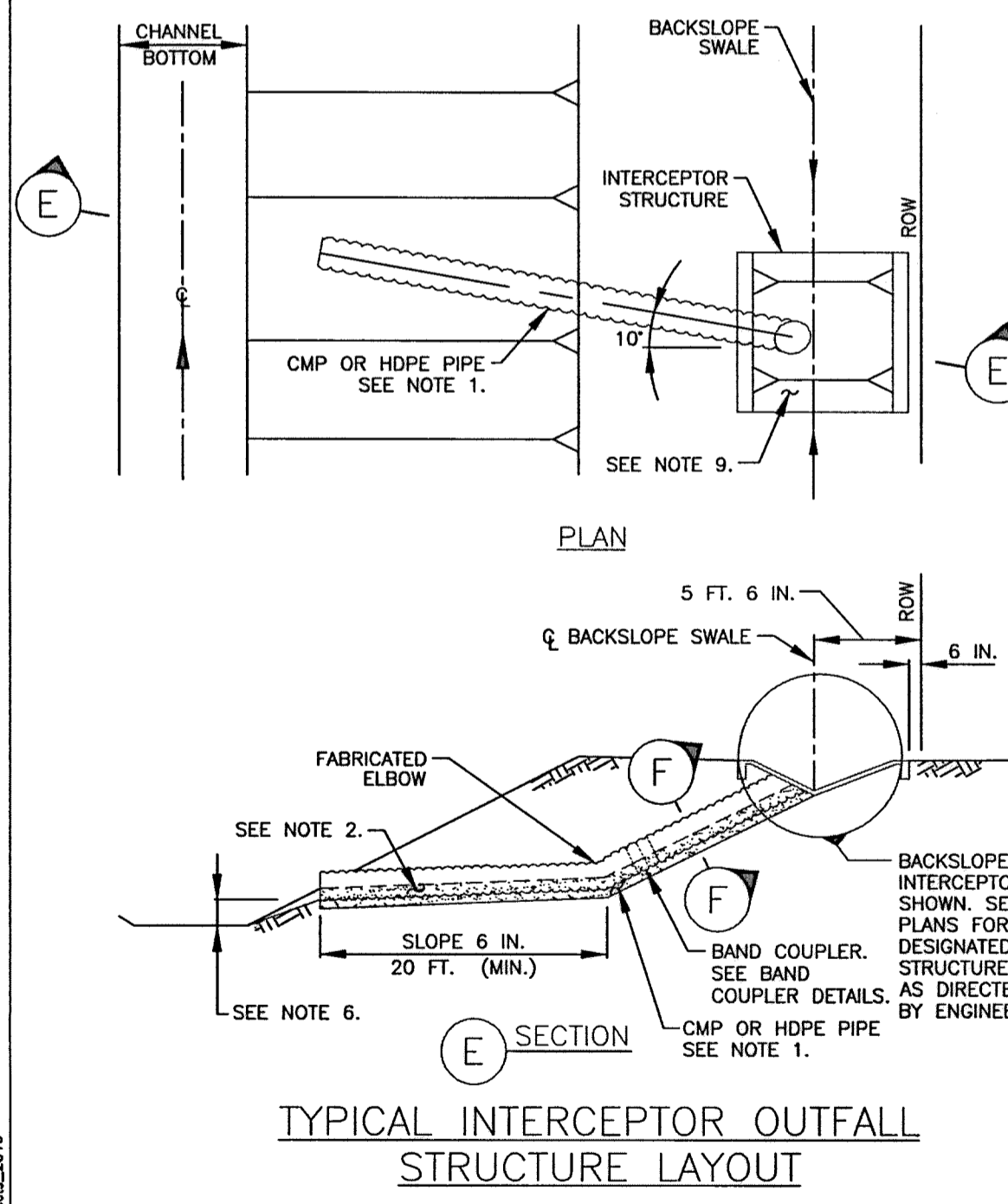
**B SECTION**  
TYPICAL BACKSLOPE INTERCEPTOR STRUCTURE (24 INCH & 30 INCH ONLY)



**C SECTION**  
COMBINATION BACKSLOPE & OFFSITE DITCH INTERCEPTOR STRUCTURE (42 INCH MAX.)



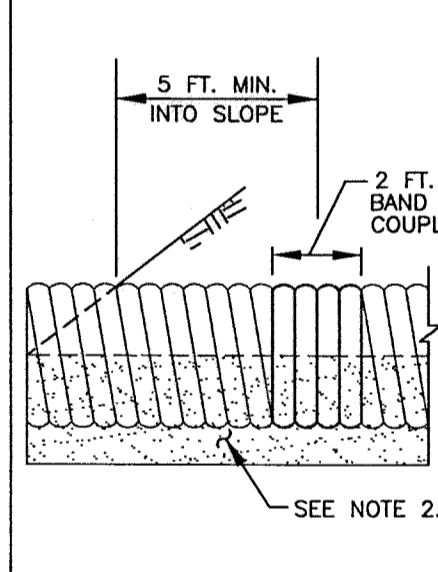
**D SECTION**  
URBAN BACKSLOPE INTERCEPTOR STRUCTURE (24 INCH ONLY)



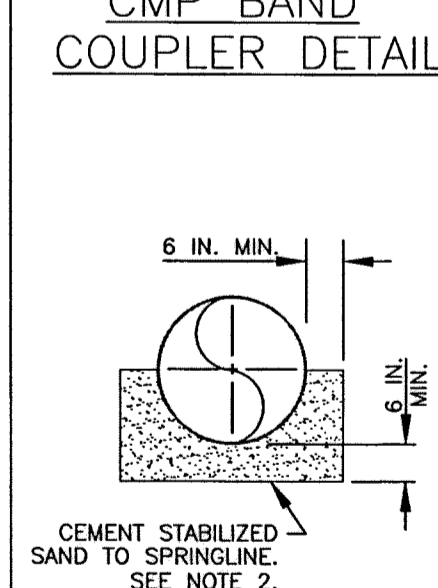
**E SECTION**  
TYPICAL INTERCEPTOR OUTFALL STRUCTURE LAYOUT

**PIPE OUTFALL IN CHANNELS**

BOTTOM WIDTH	PIPE OUTLET INVERT
6 FEET ≤ BW ≤ 20 FT	1 FOOT ABOVE FLOWLINE
20 FEET < BW ≤ 60 FT	AT TOE OF SLOPE
BW > 60 FT	AT TOE OF SLOPE

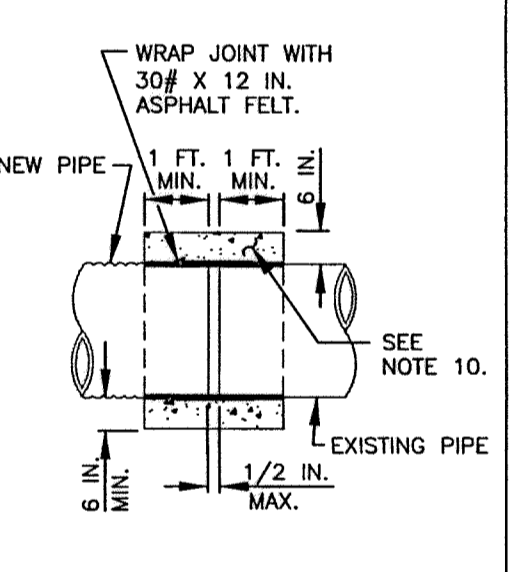


**CMP BAND COUPLER DETAIL**

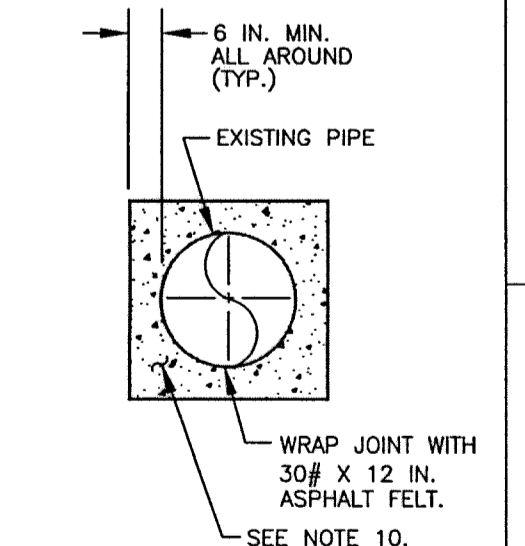


**F SECTION**

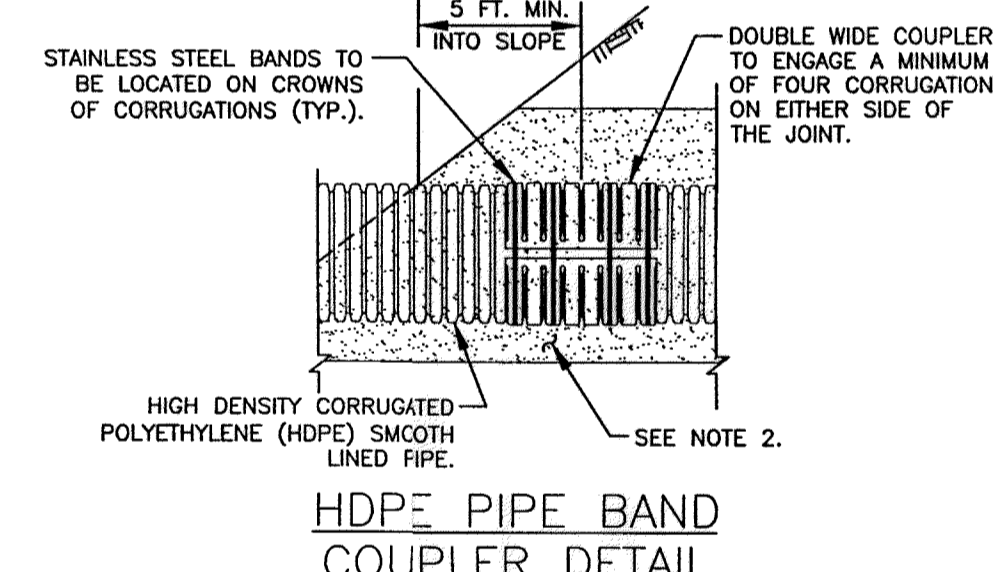
**BEDDING CMP DETAIL**



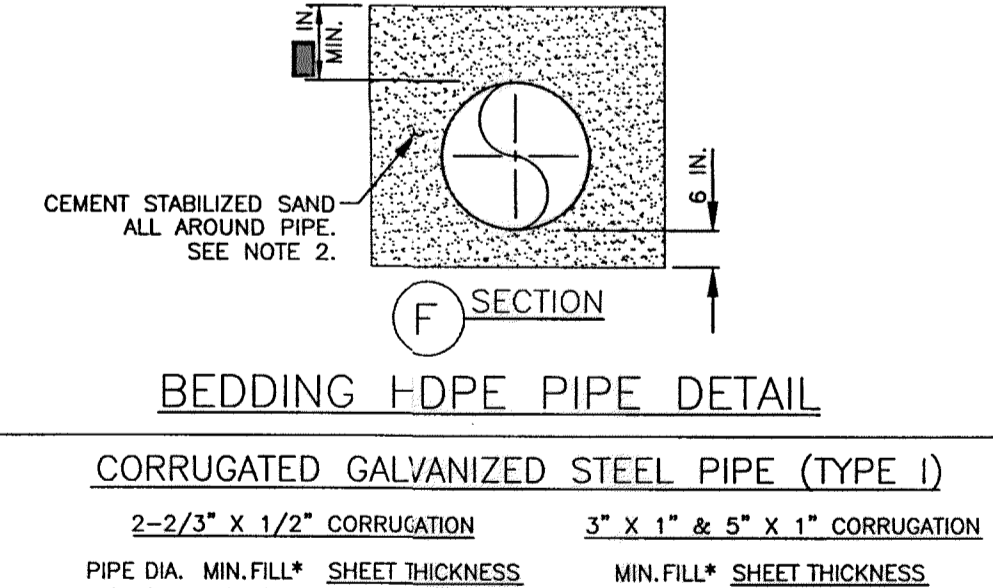
**CONCRETE COLLAR DETAIL**



**BEDDING CONCRETE PIPE DETAIL**



**HDPE PIPE BAND COUPLER DETAIL**



**BEDDING HDPE PIPE DETAIL**

**CORRUGATED GALVANIZED STEEL PIPE (TYPE I)**

2'-2 3/4" X 1 1/2" CORRUGATION				3" X 1" & 5" X 1" CORRUGATION			
PIPE DIA.	MIN. FILL*	SHEET THICKNESS	(in.)	MIN. FILL*	SHEET THICKNESS	(in.)	(mm)
24	12	16	.064	1.63	—	—	—
30	12	16	.064	1.63	—	—	—
36	12	16	.064	1.63	—	—	—
42	12	16	.064	1.63	12	16	.064 1.63
48	12	16	.064	1.63	12	16	.064 1.63

\* MINIMUM DEPTH OF COVER ABOVE TOP OF PIPE. MAXIMUM DEPTH OF COVER ABOVE TOP OF PIPE IS 20 FEET.

FOR LARGER PIPE SIZES SEE: STORM SEWER AND RIPRAP DETAILS SHEET

**INTERCEPTOR STRUCTURE DETAIL NOTES:**

- INTERCEPTOR OUTFALL PIPES WITHIN THE HCFC RIGHT-OF-WAY SHALL BE CMP OR HDPE PIPE IN ACCORDANCE WITH SPECIFICATION SECTION 02642- CORRUGATED METAL PIPE, HIGH DENSITY POLYETHYLENE (HDPE) PIPE IN ACCORDANCE WITH SPECIFICATION SECTION 2505-HIGH DENSITY POLYETHYLENE, OR APPROVED EQUAL. USE TABLE BELOW FOR CORRUGATED GALVANIZED STEEL PIPE.
- PROVIDE AND PLACE CEMENT STABILIZED SAND IN ACCORDANCE WITH SPECIFICATION SECTION 02321-CEMENT STABILIZED SAND AND SECTION 02316 - STRUCTURAL EXCAVATING.
- EXCAVATION, FILL AND BACKFILL FOR STORM SEWER OUTFALLS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02316-STRUCTURAL EXCAVATING AND BACKFILLING.
- CONCRETE SHALL BE STRUCTURAL CONCRETE IN ACCORDANCE WITH SPECIFICATION SECTION 03310-CONCRETE.
- INTERCEPTOR STRUCTURES:
  - ADJUST LENGTH AND WIDTH IN FIELD AS NECESSARY.
  - 2- FEET DEEP X 8-INCH WIDE TOE ALL AROUND THE STRUCTURE.
  - STEEL REINFORCING-#4 BARS (GRADE 40) AT 12 INCHES ON CENTER EACH WAY.
  - ANY INTERCEPTOR OUTFALL PIPE LARGER THAN MAXIMUM SIZE INDICATED REQUIRES A SEPARATE DETAIL.
  - MATCH TOP OF CONCRETE WITH NATURAL GROUND.
- IN DETENTION BASINS, SET FLOWLINE OF OUTFALL AT TOE OF THE SLOPE. IN CHANNEL, USE ELEVATION INDICATED IN THE TABLE OR 1 FOOT ABOVE NORMAL WATER LEVEL WHICH EVER IS HIGHER.
- SEE CONCRETE CHANNEL LINING DETAIL SHEET FOR CMP OUTFALL DETAILS THROUGH CONCRETE CHANNEL LINING.
- CONCRETE PAD AROUND TYPE "B" INLET: PAID FOR AS CONCRETE INTERCEPTOR STRUCTURE PER UNIT PRICE SCHEDULE. TYPE "B" INLET BOX, COH DWG. NO. 02632-02 WITH GRATE TOP, VULCAN FOUNDRY COMPANY, V-4880-1 OR APPROVED EQUAL, APPROX. 489 SQ. IN. OPENING.
- BACKSLOPE SWALE AND INTERCEPTOR STRUCTURE ELEVATIONS AND LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. FINAL ELEVATIONS AND LOCATIONS SHALL BE FIELD VERIFIED BY THE ENGINEER PRIOR TO INSTALLATION.
- STRUCTURAL CONCRETE WITH #4 BARS (GRADE 40) 12 INCH O.C. EACH WAY - FOR COLLARS ONLY.
- EPOXY CLEAN WATER CLEAR CHOICE LOGO BUTTON ON INTERCEPTORS. LOCATION TO BE DETERMINED BY THE ENGINEER.

THIS DETAIL SHEET HAS BEEN PREPARED FOR USE ON HCFC PROJECTS OR PROJECTS TO BE MAINTAINED BY THE HCFC WHEN COMPLETED BY OTHERS. AN ENGINEER WHO INCORPORATES THE DETAILS ON THIS SHEET BECOMES RESPONSIBLE FOR ITS USE IN THE END PRODUCT IN ACCORDANCE WITH RULE #17.33 (b) AND (c) OF THE TEXAS STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS.

REV	DATE	DESCRIPTION

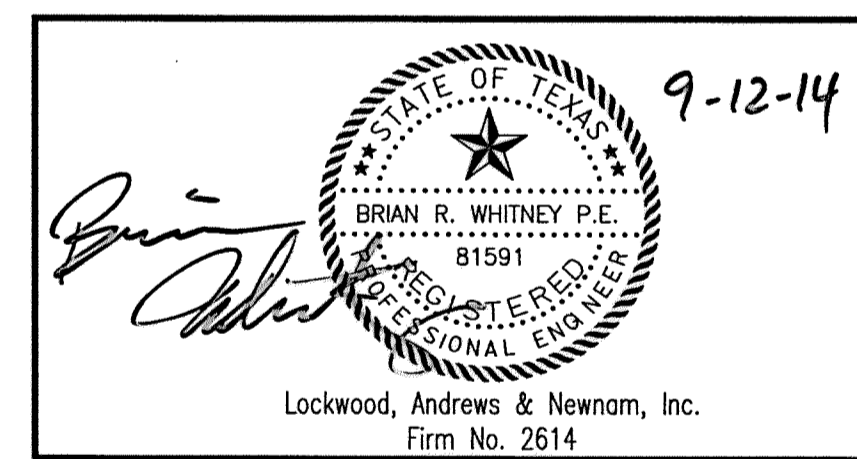
PREPARED: \_\_\_\_\_ CHECKED: \_\_\_\_\_ APPROVED: \_\_\_\_\_

Lockwood, Andrews & Newnom, Inc. A LEO A DALY COMPANY

9900 Northwest Freeway  
Houston, Texas 77092

DATE: 12-21-2010  
SCALE: NTS

SHEET NUMBER  
OF



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnom, Inc. A LEO A DALY COMPANY**

**LUMPKIN ROAD N-T17000-0012-3**

**INTERCEPTOR STRUCTURE DETAILS**

**CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING**

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SW
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'		
HORZ: 1"=20'		
SHEET:	45 OF 226	

**GENERAL NOTES**

- GOVERNING CODES AND STANDARDS:
  - INTERNATIONAL BUILDING CODE (IBC), 009.
  - AMERICAN CONCRETE INSTITUTE (ACI) - BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318-05.
  - AMERICAN CONCRETE INSTITUTE (ACI) - CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES AND COMMENTARY, ACI 350-06.
- DESIGN LOADS
  - DEAD LOAD INCLUDES WEIGHT OF STRUCTURAL COMPONENTS AND EARTH.  
SOIL UNIT WEIGHT = 130 PCF
  - LIVE LOAD ON TOP SLAB:  
HS-20 WHEEL LOAD
- PRINCIPAL OPENINGS ARE SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL EXAMINE THE CIVIL DRAWINGS FOR REQUIRED OPENINGS TO BE PROVIDED, WHETHER SHOWN ON THESE DRAWINGS OR NOT. VERIFY SIZE AND LOCATION OF ALL OPENINGS.
- SEE CIVIL DRAWINGS FOR FLOOR ELEVATIONS, SLOPES, LOCATION OF DEPRESSED FLOOR AREAS, FLOOR FINISHES, WALKS, CURBS, TOPPING SLABS, ETC. ALL SLAB RECESSES SHALL BE PROVIDED BY THE CONTRACTOR WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT.
- STRUCTURAL MEMBERS HAVE BEEN SPACED TO ACCOMMODATE THE EQUIPMENT SPECIFIED. ANY SUBSTITUTIONS CAUSING CHANGES IN THE STRUCTURE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL. THE CALCULATIONS AND ANY ACCOMPANYING DRAWINGS SHALL BE SEALED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF TEXAS.
- ANY REQUIRED CHANGES TO THE STRUCTURAL DRAWINGS DUE TO THE ACCEPTANCE OF ALTERNATES AND/OR SUBSTITUTES IS THE RESPONSIBILITY OF THE CONTRACTOR AND CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL. THE CALCULATIONS AND ANY ACCOMPANYING DRAWINGS SHALL BE SEALED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF TEXAS.
- REPRODUCTION NOTE:  
THE USE OR REPRODUCTION OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREIN AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREIN. IN ADDITION, ALL REFERENCES TO LOCKWOOD, ANDREWS AND NEWMAN, INC., INCLUDING ALL PROFESSIONAL SEALS ARE TO BE REMOVED IF THESE CONTRACT DRAWINGS ARE TO BE USED AS SHOP DRAWINGS.
- REFER TO THE SPECIFICATIONS FOR DETAILED REQUIREMENTS NOT FULLY ADDRESSED IN THESE NOTES.

**STRUCTURAL EXCAVATION, BACKFILL, AND COMPACTION NOTES**

- BEFORE THE START OF EARTHWORK OPERATIONS, ADEQUATELY PROTECT EXISTING STRUCTURES, UTILITIES, AND OTHER PERMANENT OBJECTS FROM DAMAGE. THE CONTRACTOR IS RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF ALL DAMAGED ELEMENTS, AT NO ADDITIONAL COST TO THE OWNER.
- EXCAVATION WORK SHALL BE NEAT AND FREE OF DEBRIS AND LOOSE MATERIAL. REFER TO THE SPECIFICATIONS FOR PROTECTION OF EXCAVATIONS.
- EXCAVATIONS SHALL NOT BE MADE DURING INCLEMENT WEATHER, WATER ACCUMULATION IN EXCAVATIONS EXCEEDING 1 INCH SHALL BE PUMPED OUT BEFORE THE CONCRETE IS PLACED.
- ALL EXCAVATIONS AND BACKFILL OPERATIONS SHALL BE IN ACCORDANCE WITH THE LATEST OSHA EXCAVATION SAFETY STANDARDS.
- ALL SURFICIAL VEGETATION AND OTHER ORGANIC MATTER SHALL BE REMOVED BENEATH PROPOSED FOUNDATIONS AND SLABS-ON-GRADE PRIOR TO CONSTRUCTION. THE EXPOSED SURFACE SHALL BE PROOF-ROLLED WITH ANY SOFT OR WEAK AREAS REMOVED AND REPLACED WITH COMPACTED SELECT FILL.
- BACKFILL MATERIAL SHALL BE A NON-ORGANIC, NON-EXPANSIVE, WELL-GRADED SOIL AND SHALL BE COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY, MEETING THE REQUIREMENTS OF CLASS 1 BACKFILL AS SPECIFIED IN SPECIFICATION SECTION 02316 AND 02320.

**CONCRETE NOTES**

- CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318 AND ACI 350.
- CONCRETE FOR THE JUNCTION BOX STRUCTURES SHALL BE NORMAL WEIGHT CONCRETE AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 POUNDS PER SQUARE INCH AT 28 DAYS.
- FOR ALL OTHER CONCRETE STRENGTH REQUIREMENTS, REFER TO THE CIVIL SHEETS.
- NORMAL WEIGHT CONCRETE SHALL WEIGH NOT MORE THAN 150 PCF.
- DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS SHALL COMPLY WITH ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).
- REINFORCING STEEL SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL, CONFORMING TO ASTM A 615 WITH SUPPLEMENTARY REQUIREMENTS S1, GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185, GRADE 60 AND SHALL BE SUPPLIED IN FLAT SHEETS ONLY.
- PROVIDE ONE NO. 5 x 4'-0" BAR AT ALL RE-ENTRANT CORNERS, PLACED ON THE DIAGONAL WITH 1 INCH CLEARANCE FROM CORNER AND TOP OF SLAB. (THIS INCLUDES ANY RECTILINEAR HOLES MADE DUE TO STANDARD CONSTRUCTION PRACTICES.)
- PROVIDE A 3/4-INCH CHAMFER AT ALL EXPOSED EDGES OF CONCRETE UNLESS DETAILED OTHERWISE.
- PROVIDE PLASTIC CHAIRS AND SPACERS AT 5'-0" O.C. FOR ALL SLABS AND BEAMS ABOVE GRADE.
- LAP CONTINUOUS UNSCHEDULED REINFORCING BARS 30 BAR DIAMETERS UNLESS NOTED OTHERWISE.
- THE LOCATION OF CONSTRUCTION JOINTS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. CONSTRUCTION JOINTS SHALL BE MADE IN THE CENTER OF SPANS WITH VERTICAL BULKHEADS UNLESS NOTED OTHERWISE. THERE SHALL BE NO HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE POURS.
- HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS WITH 90 DEGREE BENDS AND 12 INCH RETURNS ALONG EACH WALL AT CORNERS.
- PROVIDE NO. 4 HORIZONTAL AT 12 INCHES O.C. MAXIMUM IN EACH FACE OF BEAMS EXCEEDING 21 INCHES IN DEPTH.
- MINIMUM REINFORCING STEEL COVERAGE SHALL BE AS FOLLOWS:

TOP SLABS  
WALLS  
CONCRETE CAST PERMANENTLY AGAINST EARTH  
BASE SLABS

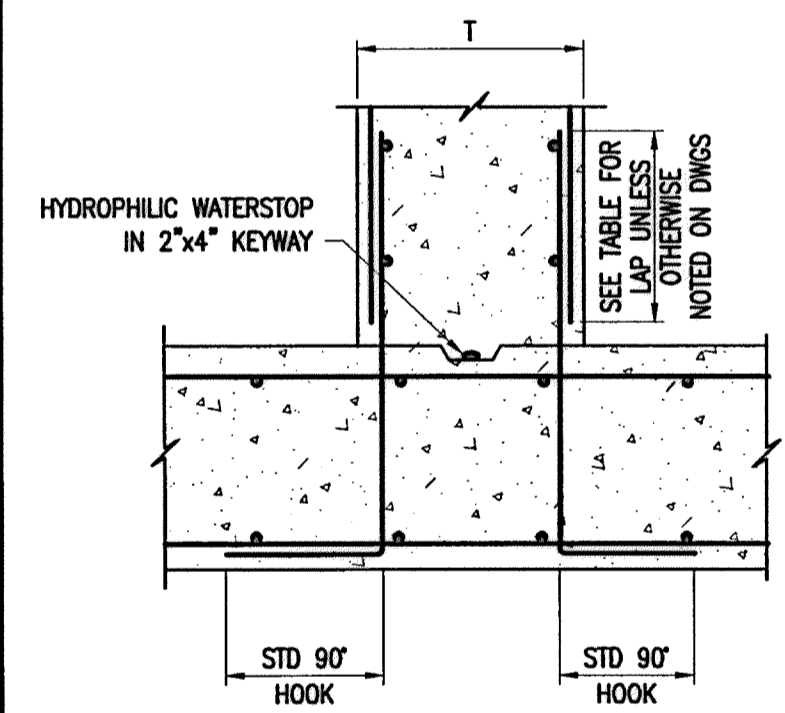
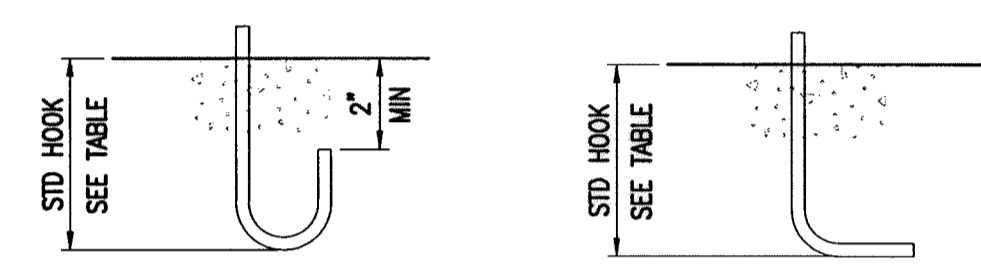
1 1/2"  
1 1/2"  
3"  
1 1/2" TOP & SIDES

- COAT THE ENDS OF ANY REINFORCING STEEL BARS LEFT EXPOSED IN THE COMPLETED STRUCTURE.

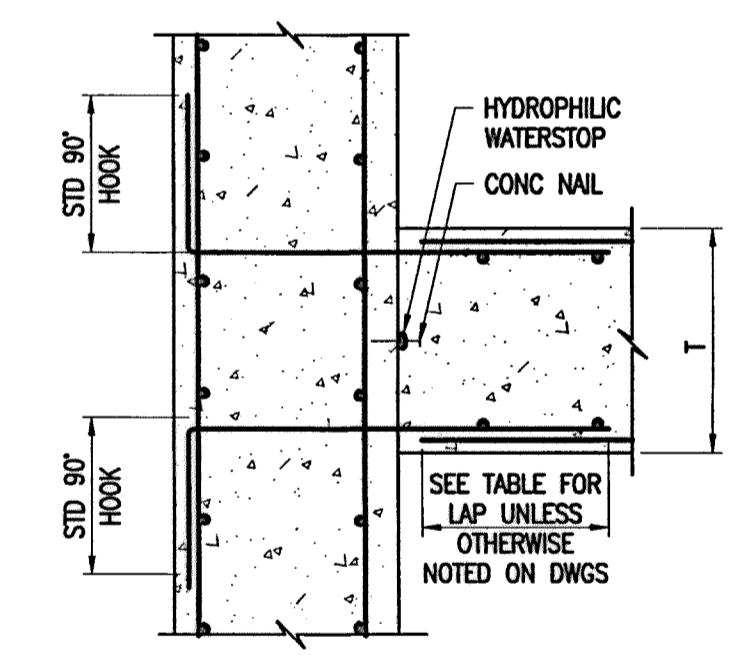
**REINFORCING LAP SPLICE & EMBEDMENT SCHEDULE**

BAR SIZE	MIN LAP LENGTH (IN)		MIN EMBEDMENT LENGTH (IN)		
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	STD HOOK
3	24	18	18	14	7
4	32	24	25	19	9
5	40	31	31	24	12
6	48	37	37	28	14
7	70	54	54	42	17
8	80	62	62	47	19
9	90	70	70	54	21
10	102	78	78	60	24
11	113	87	87	67	27

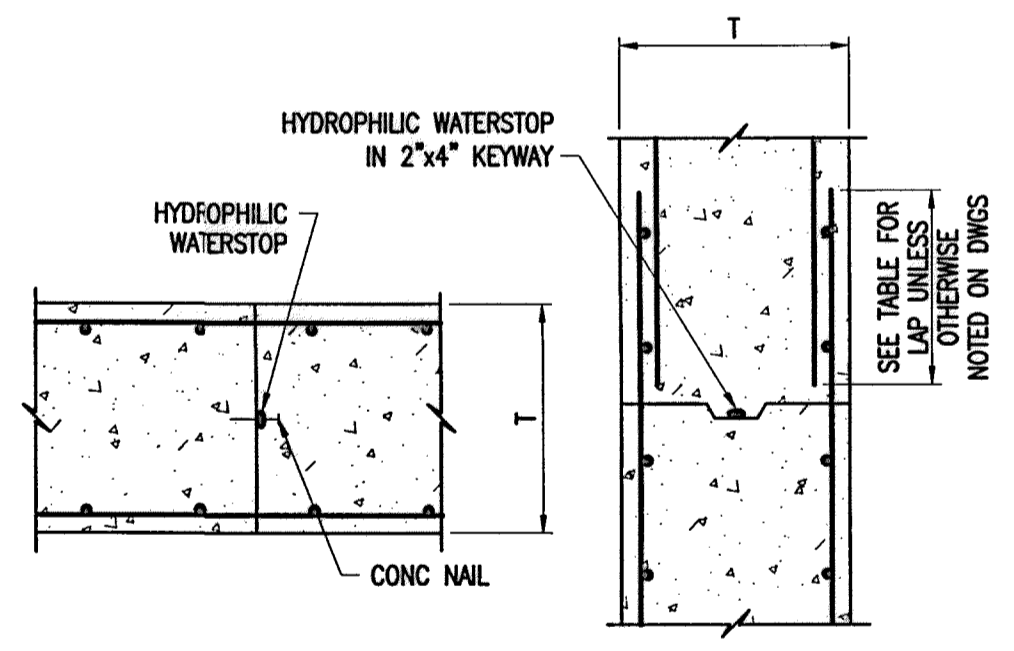
- LAP SPLICES AND EMBEDMENT LENGTHS NOT SHOWN ON THE DRAWINGS SHALL CONFORM TO THE TABLE ABOVE.
- TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES DEPTH OF CONCRETE CAST BELOW THE REINFORCING BAR.
- EMBEDMENT LENGTH OF STANDARD HOOKS.



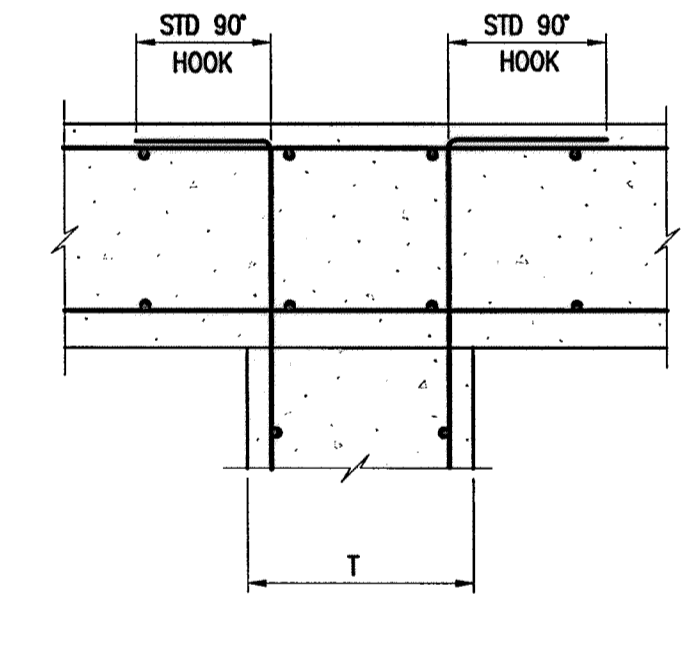
**1 CONSTRUCTION JOINT**  
BASE OF WALLS



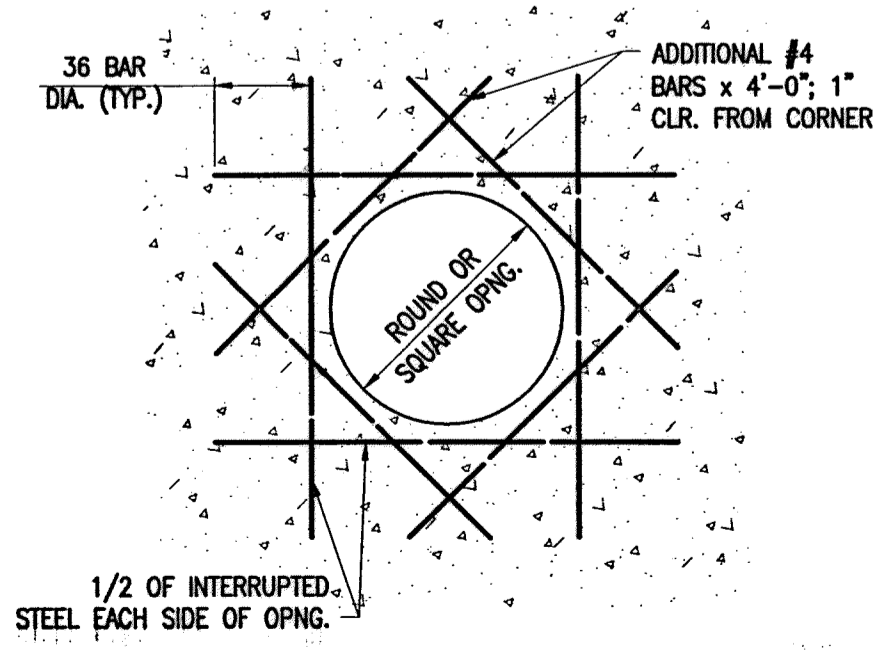
**2 CONSTRUCTION JOINT**  
WALL INTERSECTIONS



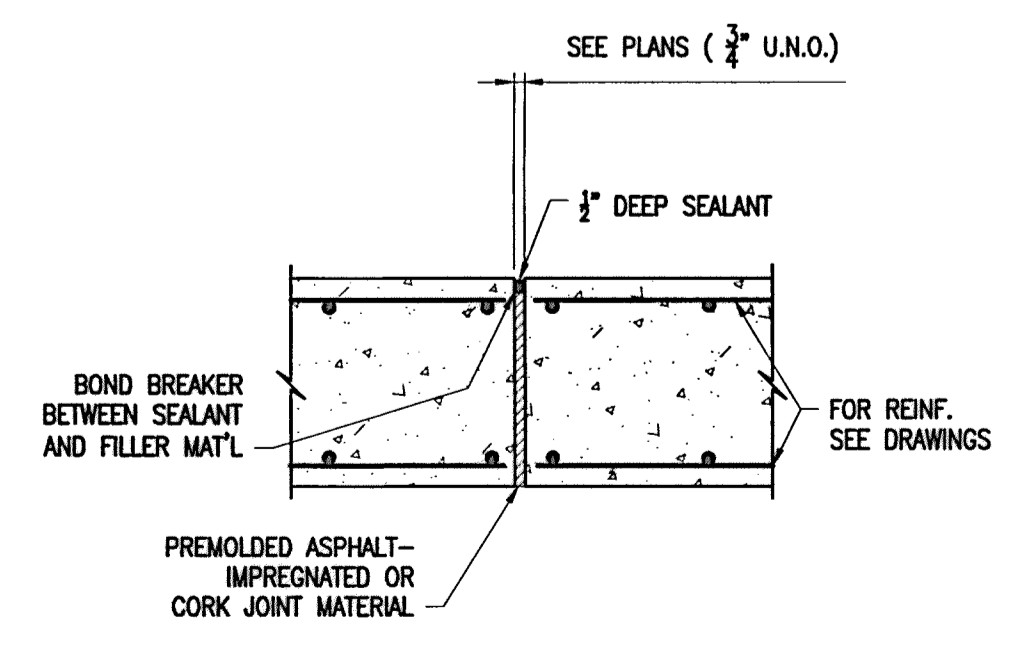
**3 CONSTRUCTION JOINT**  
FOR SLABS AND WALLS



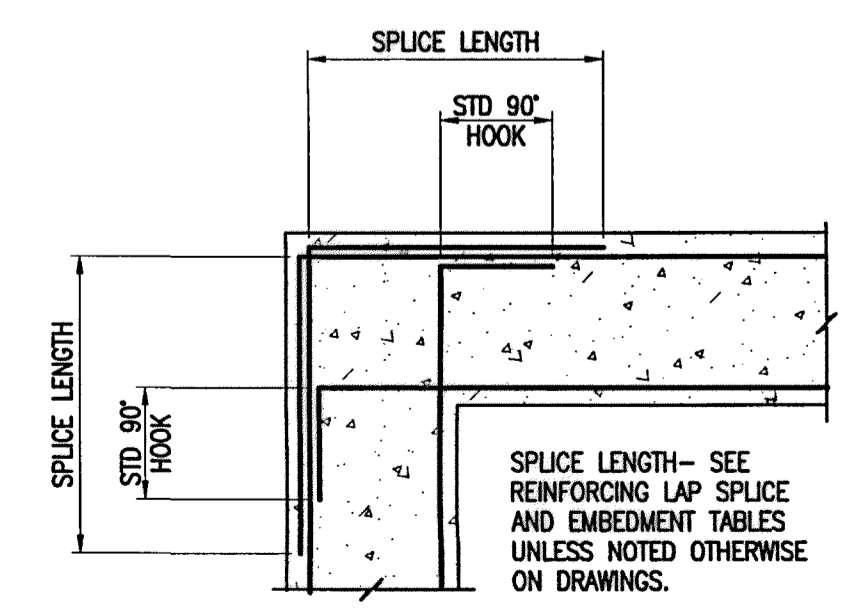
**4 CONSTRUCTION JOINT**  
WALL TO SLAB SOFFIT



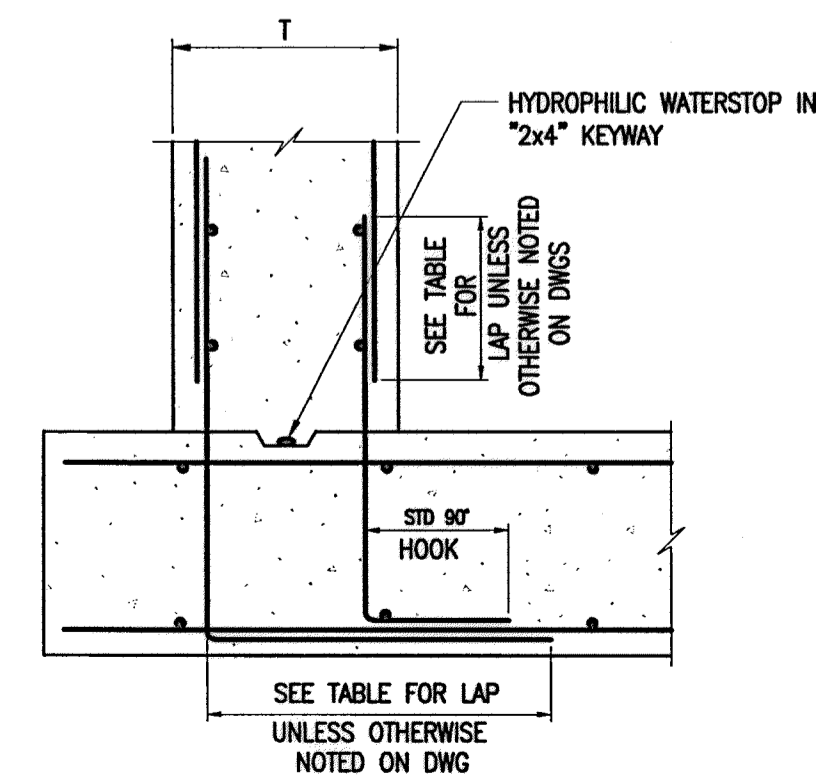
**5 REINFORCING AT OPENINGS**  
8" OR LARGER



**6 ISOLATION OR EXPANSION JOINT**  
WITHOUT DOWELS



**7 CORNER REINFORCING**  
FOR WALLS OR GRADE BEAMS



**8 CONSTRUCTION JOINT**  
BASE OF WALLS

Lockwood, Andrews & Newnam, Inc.  
ID # 2614

7/17/14

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
JUNCTION BOX  
GENERAL NOTES AND TYPICAL DETAILS (S1)

SHEET 1 OF 2

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

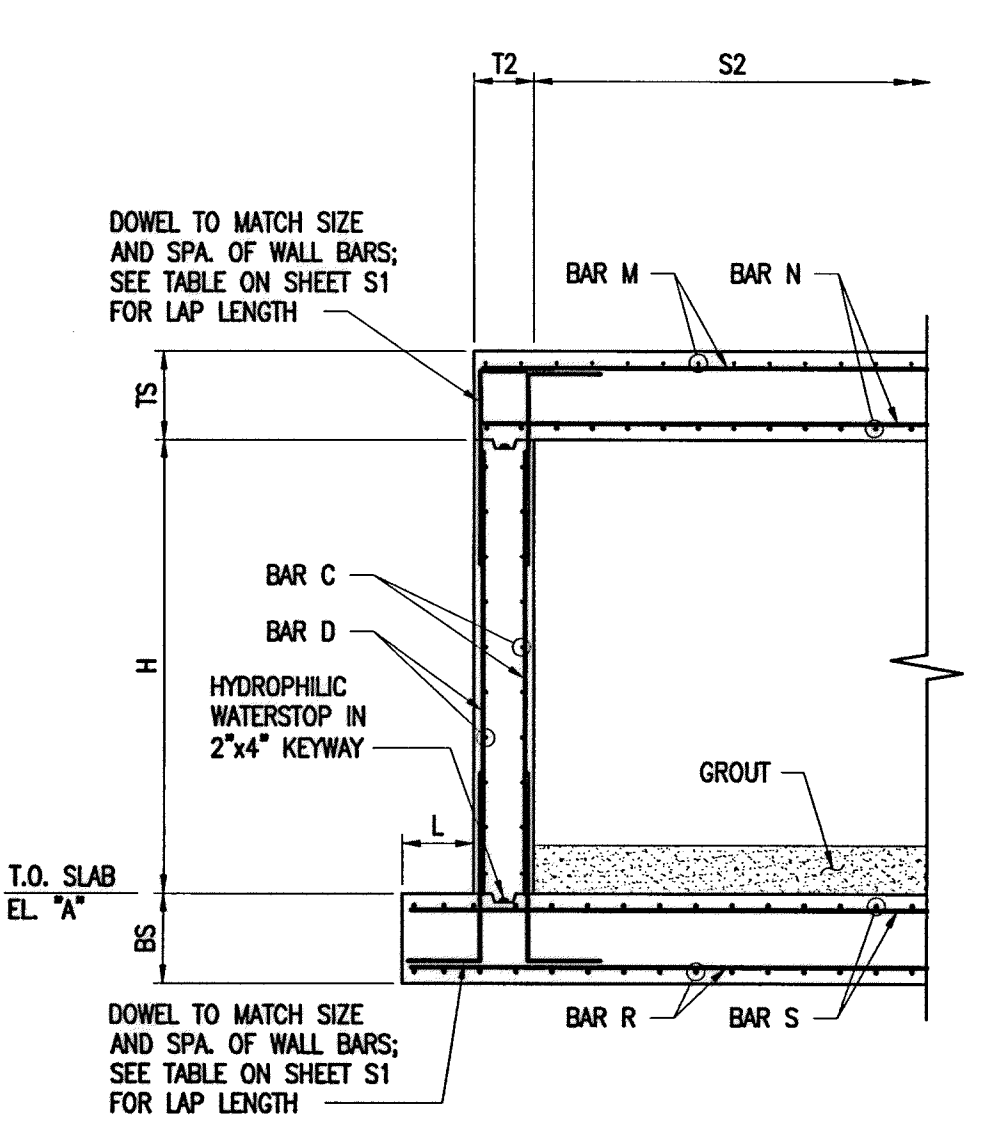
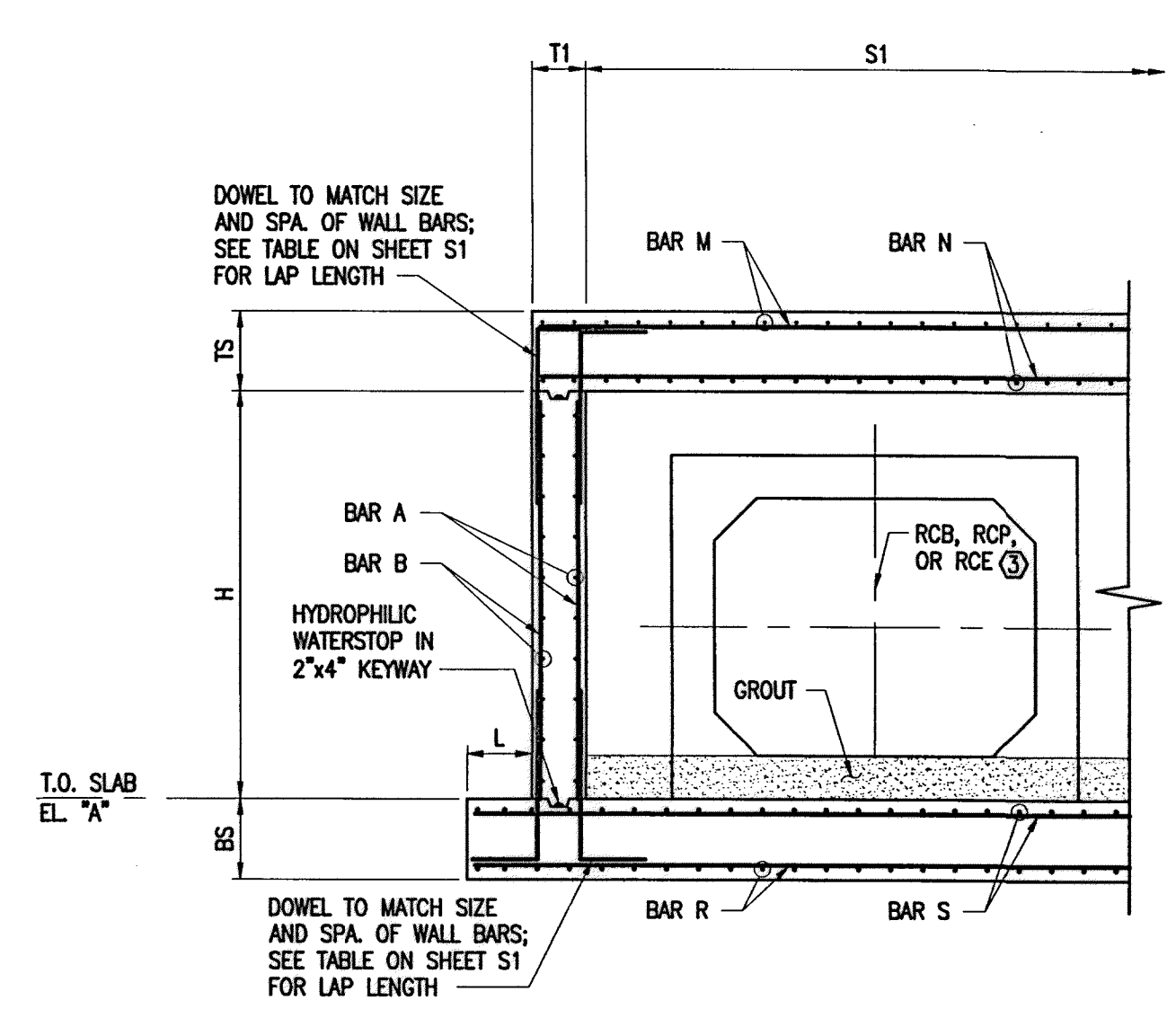
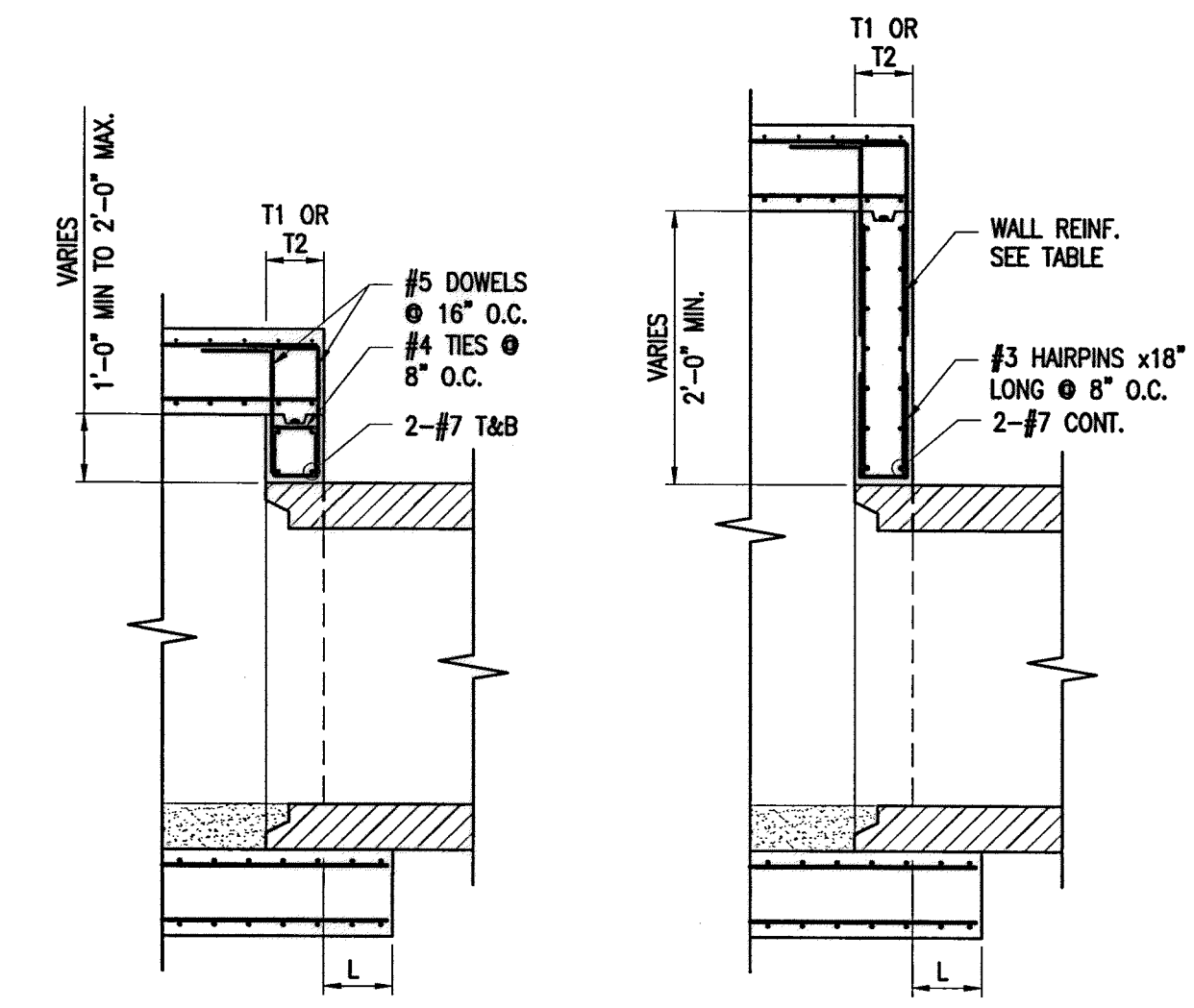
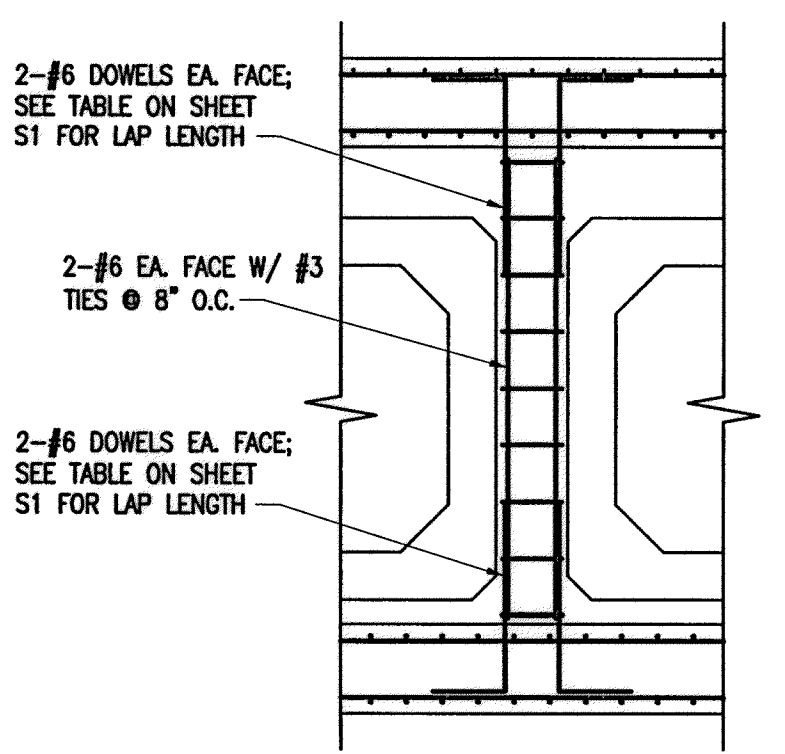
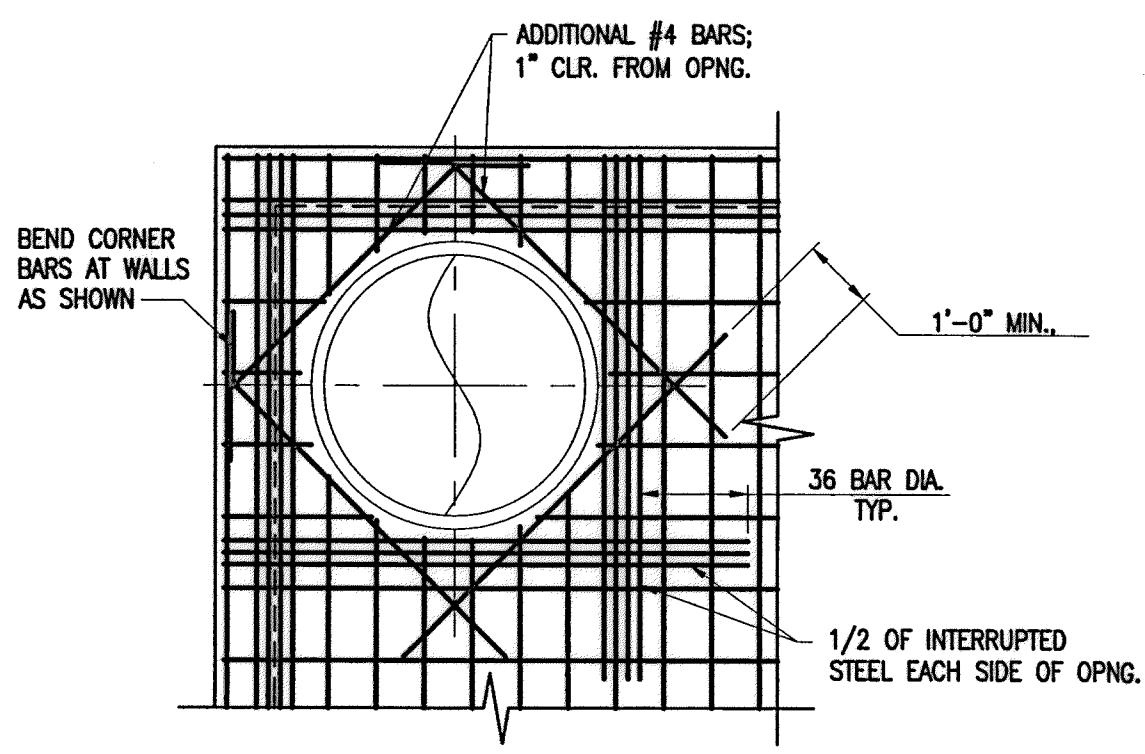
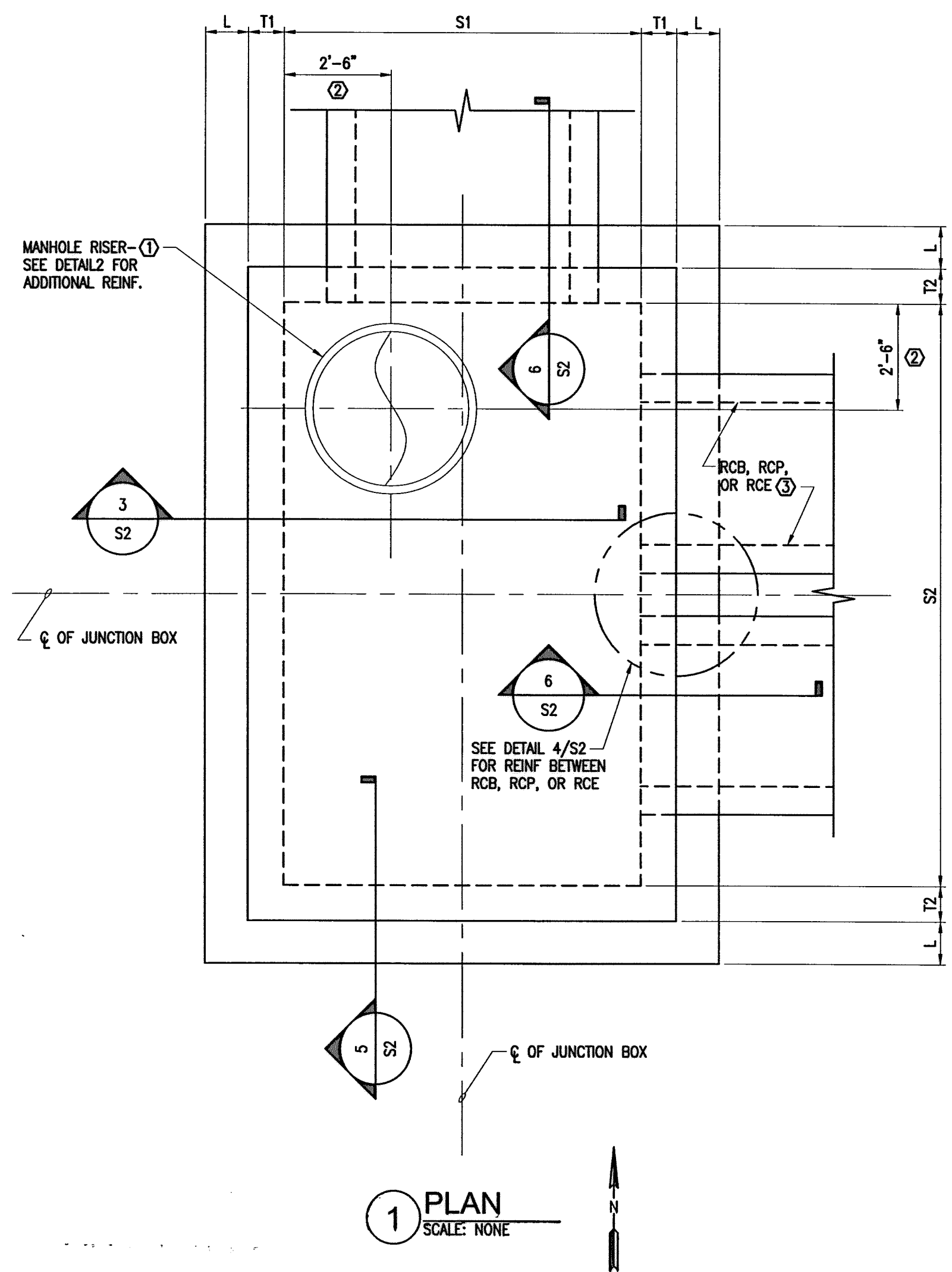
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO.:	FACILITY:
DRAWING SCALE: NONE	CITY DWG NO.:
VERT:	
HORZ:	
SHEET:	
46 OF 186	

Savage, Jennifer 10:01:56 AM 7/15/2014 C:\projects\jnsavage\0153842\001-PR-STRC-IBOX.dwg

JUNCTION BOX DIMENSIONS										REINFORCING STEEL															
ID	S1	S2	H	T1	T2	TS	BS	L	EL. "A"	BARS A	BARS B	BARS C	BARS D	BARS M	BARS N	BARS R	BARS S								
										SIZE	SPA.	SIZE	SPA.	SIZE	SPA.	SIZE	SPA.								
JB AM38A	6'-0"	15'-9"	10'-5 1/2"	12"	18"	1'-0"	1'-3"	1'-0"	65.85'	#4	8"	#5	6"	#5	8"	#7	6"	#5	12"	#5	12"	#5	12"		
JB AM38	10'-4"	5'-8"	11'-3 1/4"	18"	12"	1'-0"	1'-3"	1'-0"	65.20'	#5	8"	#7	8"	#4	8"	#5	6"	#5	12"	#5	12"	#5	12"		
JB AM42	22'-9"	11'-6"	11'-10 1/2"	21"	18"	1'-3"	1'-3"	1'-0"	64.60'	#5	8"	#7	6"	#5	8"	#7	8"	#5	12"	#5	6"	#5	12"	#5	6"
JB AM44	6'-0"	11'-6"	11'-11 1/2"	12"	18"	1'-0"	1'-3"	1'-0"	68.33'	#4	8"	#5	6"	#5	8"	#7	8"	#5	12"	#5	12"	#5	12"	#5	12"
JB AM56	13'-8"	10'-6"	14'-4 1/4"	21"	21"	1'-3"	1'-3"	1'-0"	64.22'	#5	8"	#7	6"	#5	8"	#7	8"	#5	12"	#5	6"	#5	12"	#5	6"
JB AM58 & AM55	23'-0"	6'-0"	11'-1"	21"	12"	1'-0"	1'-3"	1'-0"	64.49'	#5	8"	#7	6"	#4	8"	#5	6"	#5	12"	#5	12"	#5	12"	#5	12"

- KEYED NOTES:**
- SEE PLAN AND PROFILE SHEETS FOR THE TOP ELEVATION OF THE MANHOLE COVERS. SEE JUNCTION BOX MANHOLE RISER SHEET FOR MANHOLE DETAILS.
  - TYPICAL DIMENSION UNLESS OTHERWISE NOTED ON PLAN.
  - SEE PLAN AND PROFILE SHEETS FOR RCB, RCP, OR RCE SIZE, FLOWLINE, AND LOCATION.



NOTE: MAIN REINF. FOR TOP AND BOTTOM SLAB TO RUN IN THE SHORT DIRECTION. PLACE MAIN REINF. ON OUTSIDE FACE OF EACH SLAB.

Lockwood, Andrews & Newnam, Inc.  
ID # 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
JUNCTION BOX  
PLAN, SECTION, AND SCHEDULE ( S2 )

SHEET 2 OF 2

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO.: \_\_\_\_\_ FACILITY: \_\_\_\_\_

DRAWING SCALE: NONE CITY DWG NO. \_\_\_\_\_

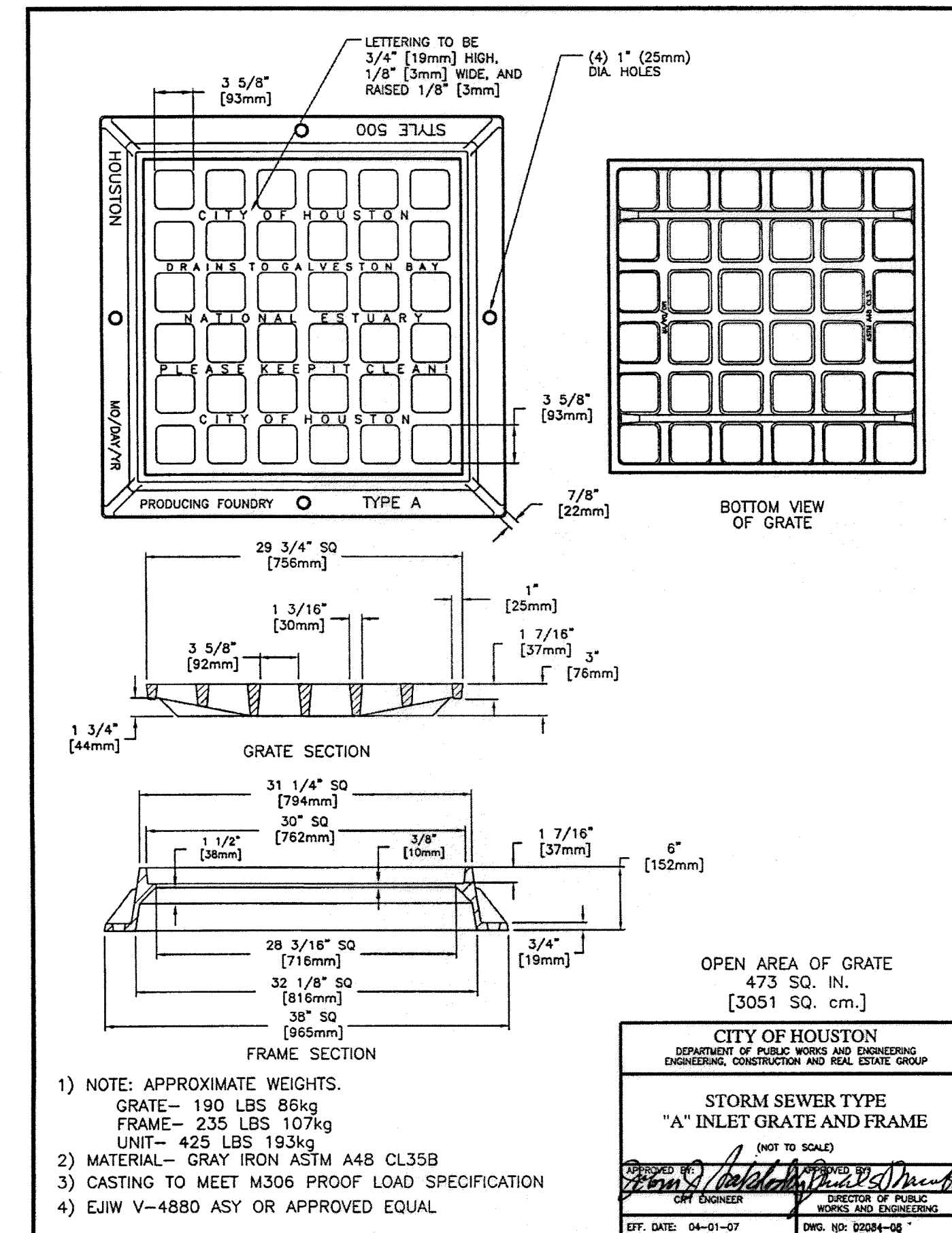
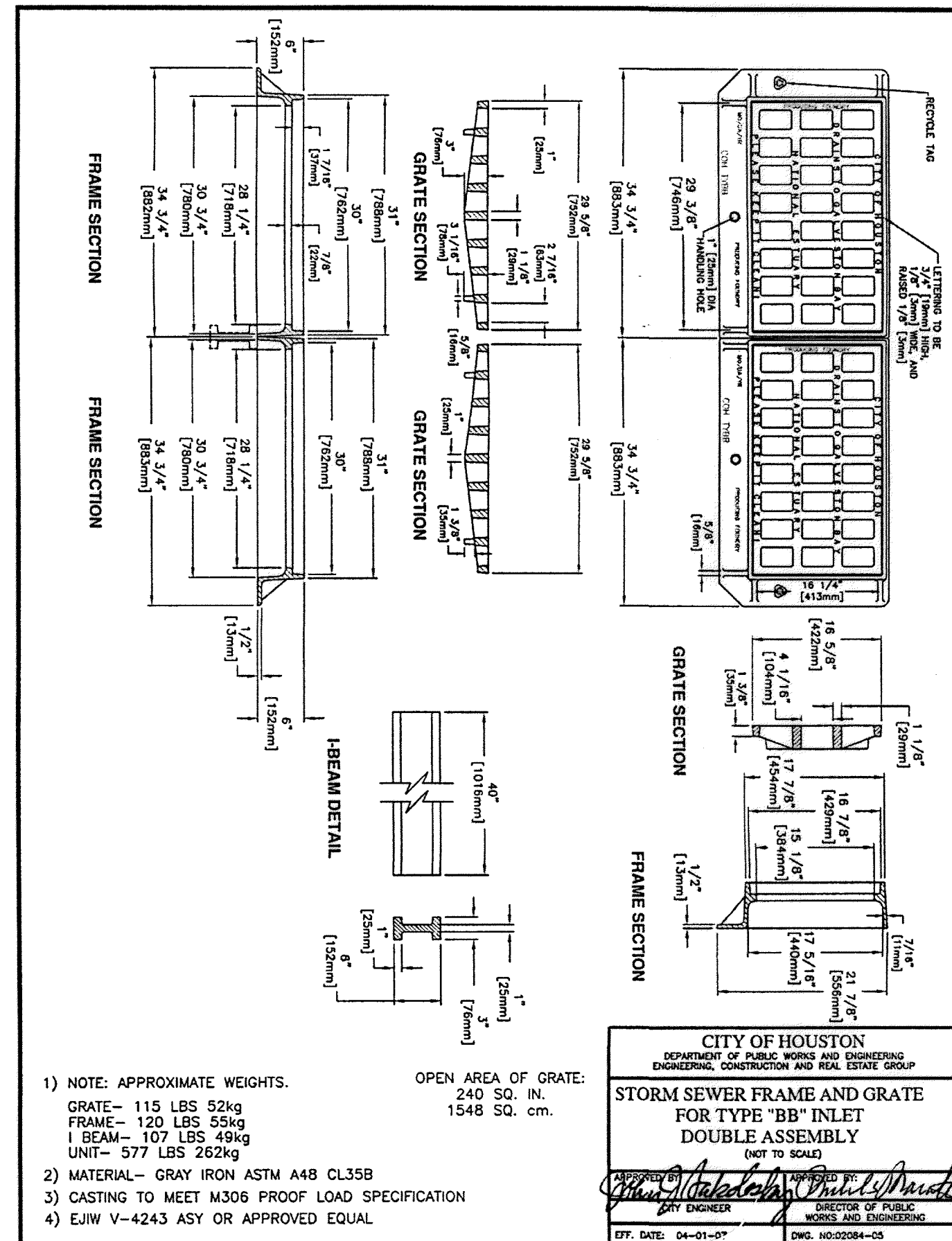
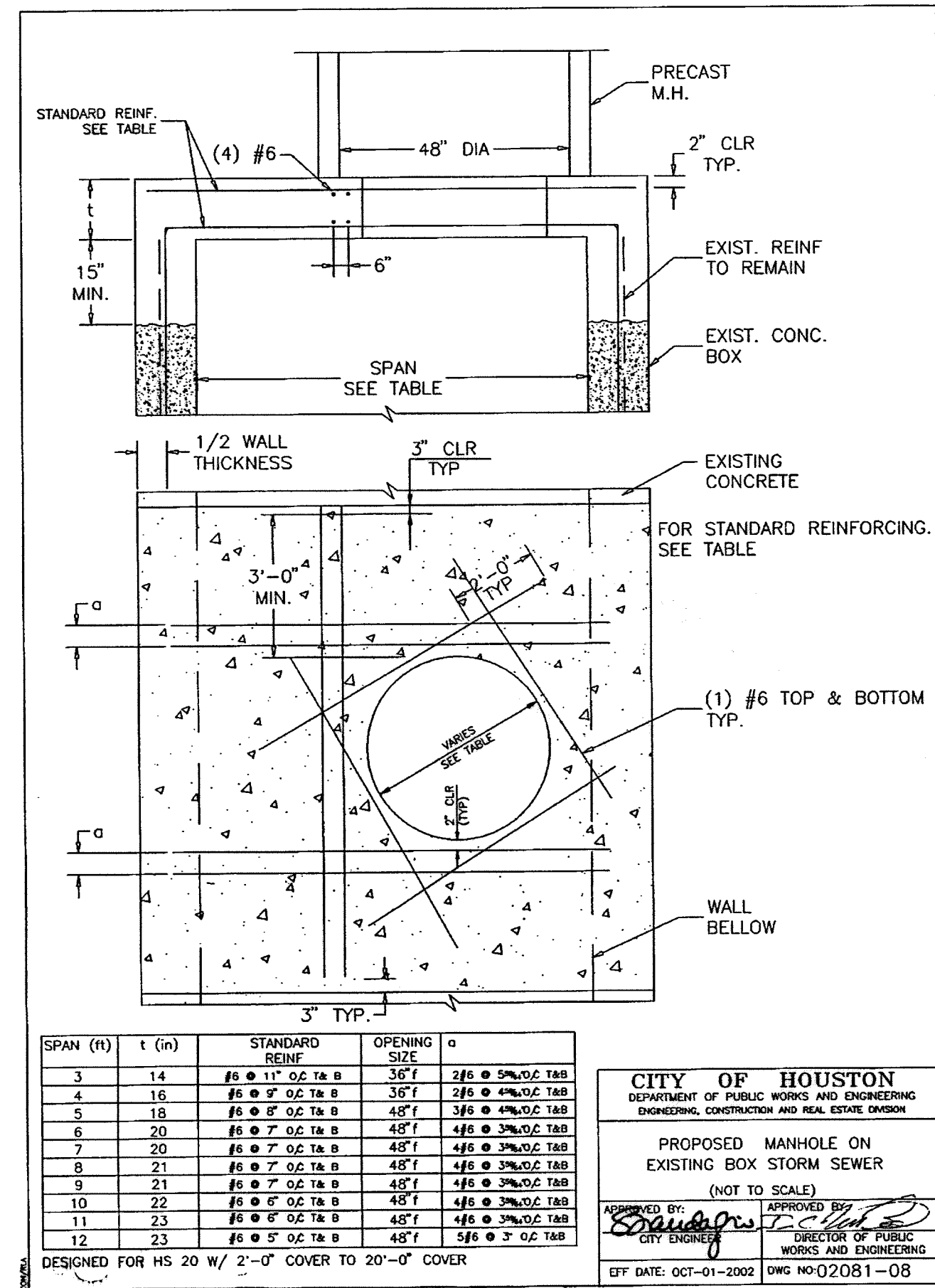
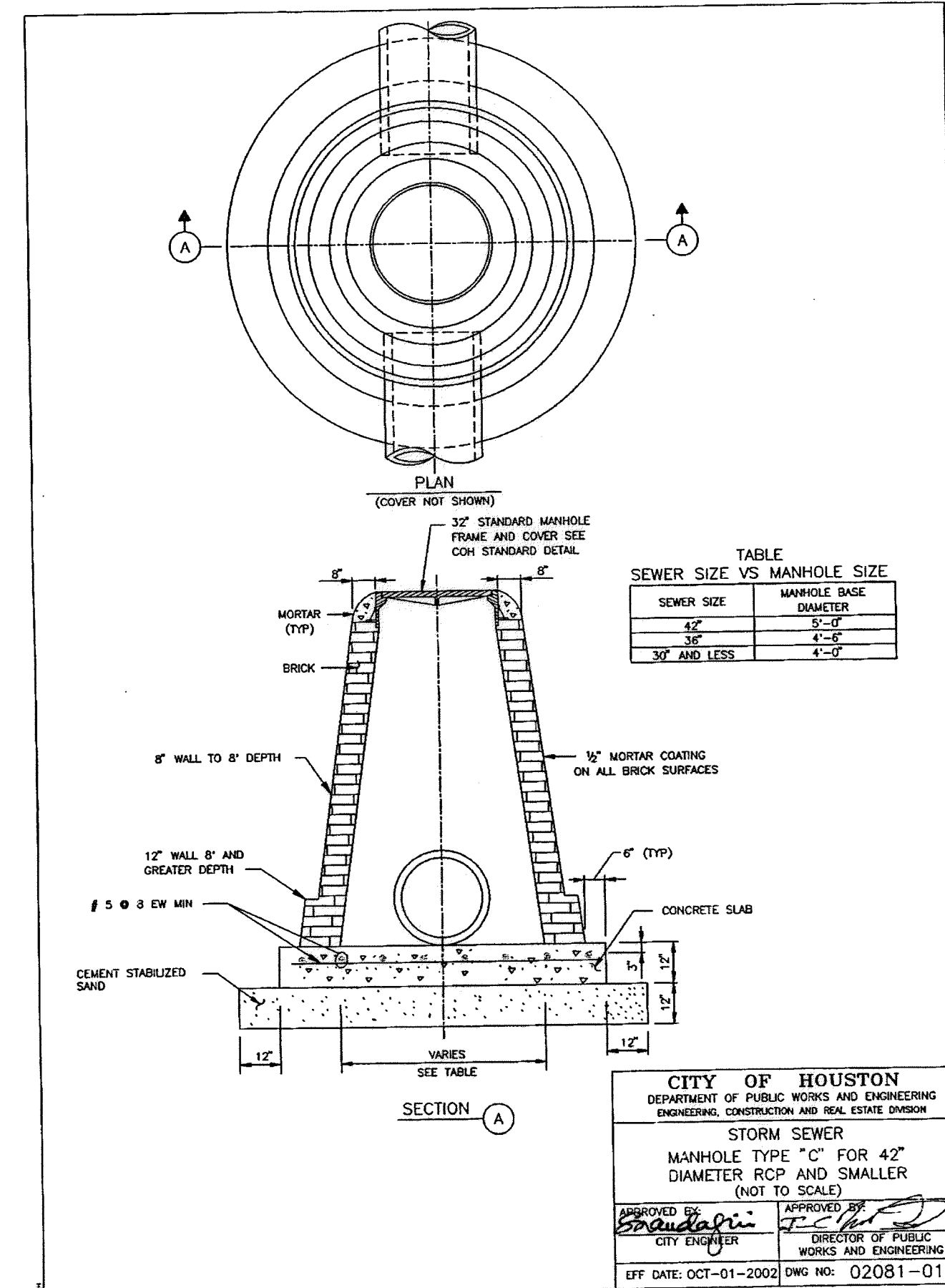
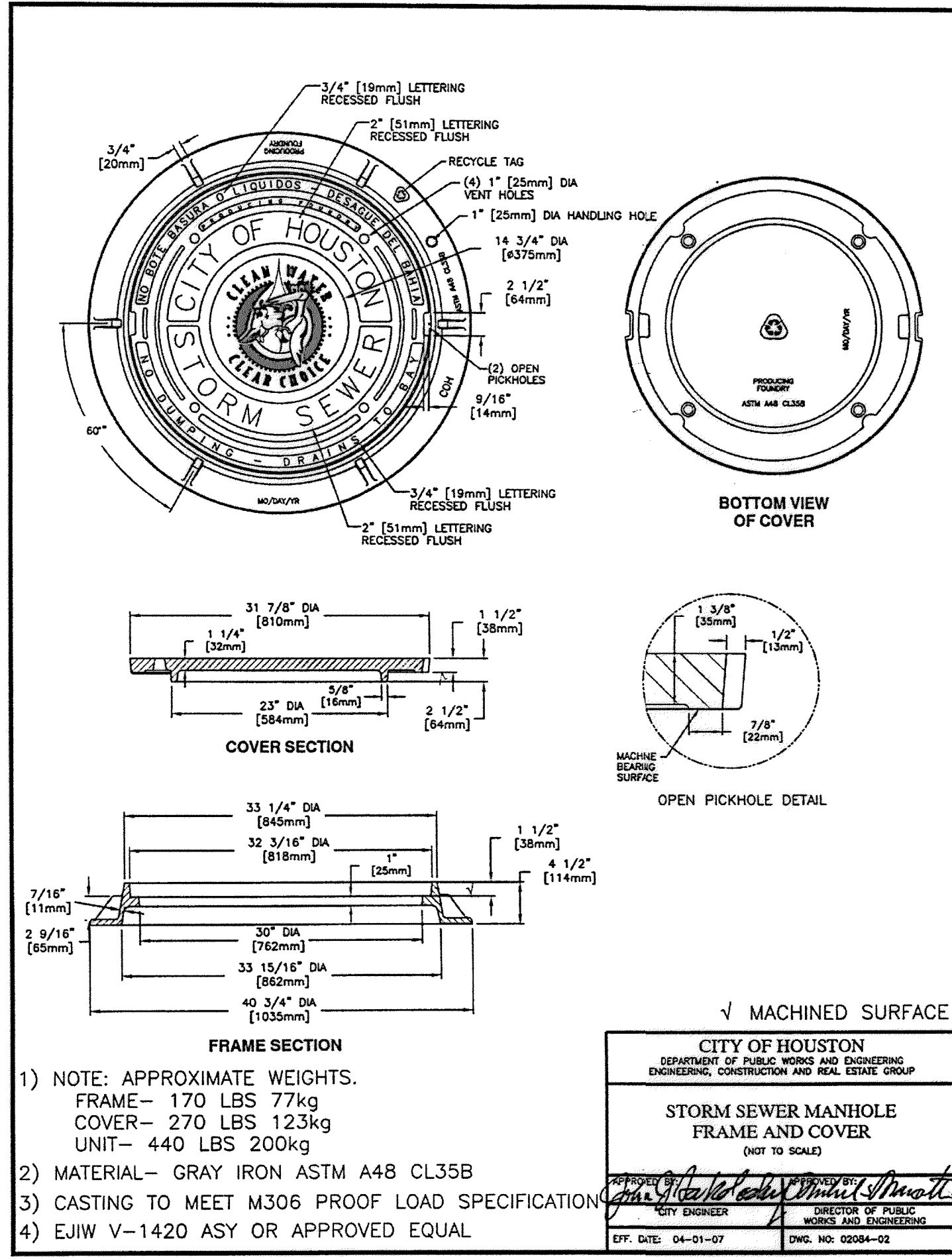
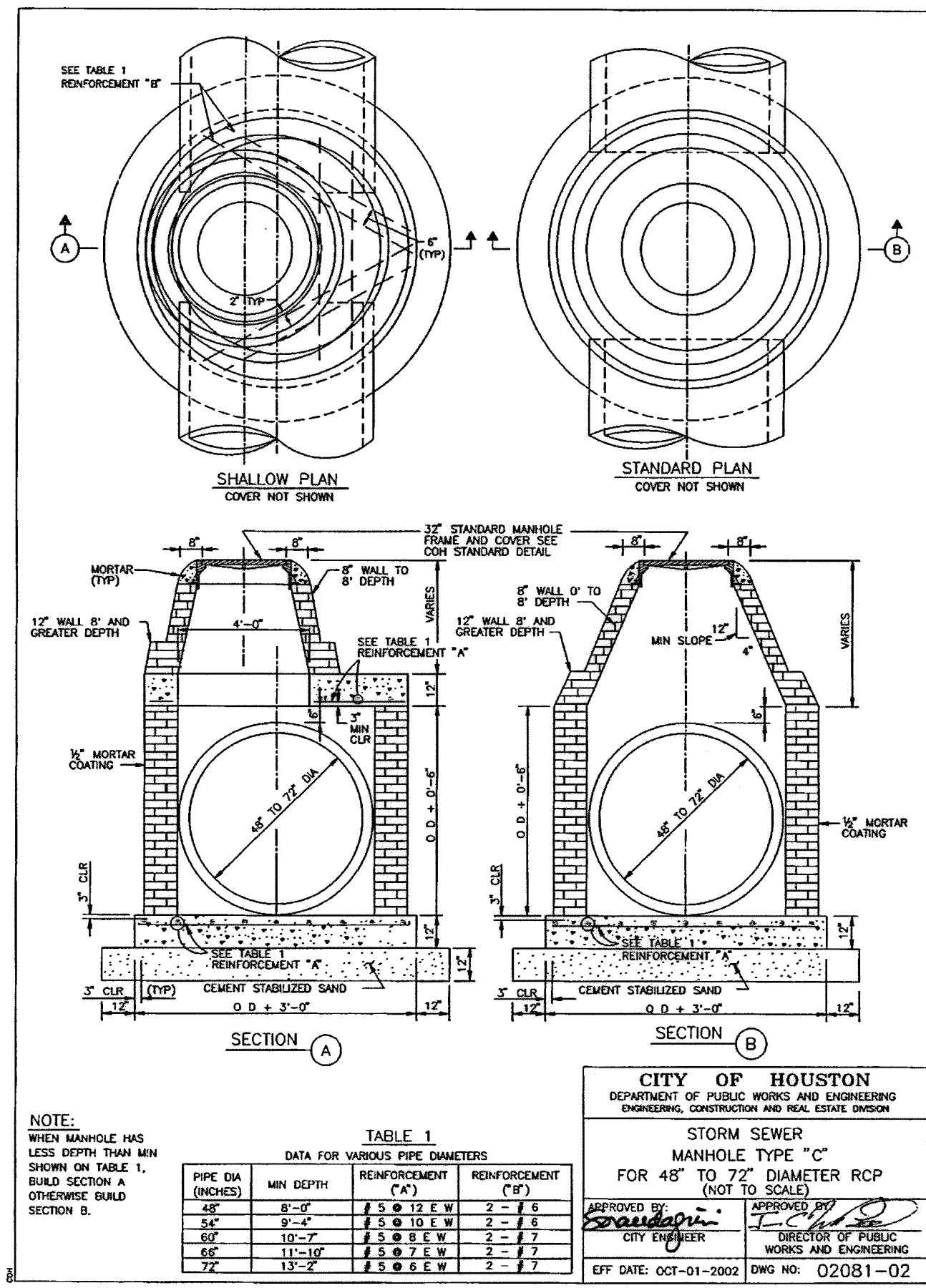
VERT: \_\_\_\_\_

HORZ: \_\_\_\_\_

SHEET: \_\_\_\_\_

47 OF 186

APR. REVISIONS DATE No. 10/01/56 AM 7/15/2014 Savage, Jennifer



9-12-14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3

**STANDARD DRAINAGE DETAILS**

SHEET 1 OF 4

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

FILE NO.:

DRAWING SCALE:

VERT: NOT TO SCALE  
HORZ: NOT TO SCALE

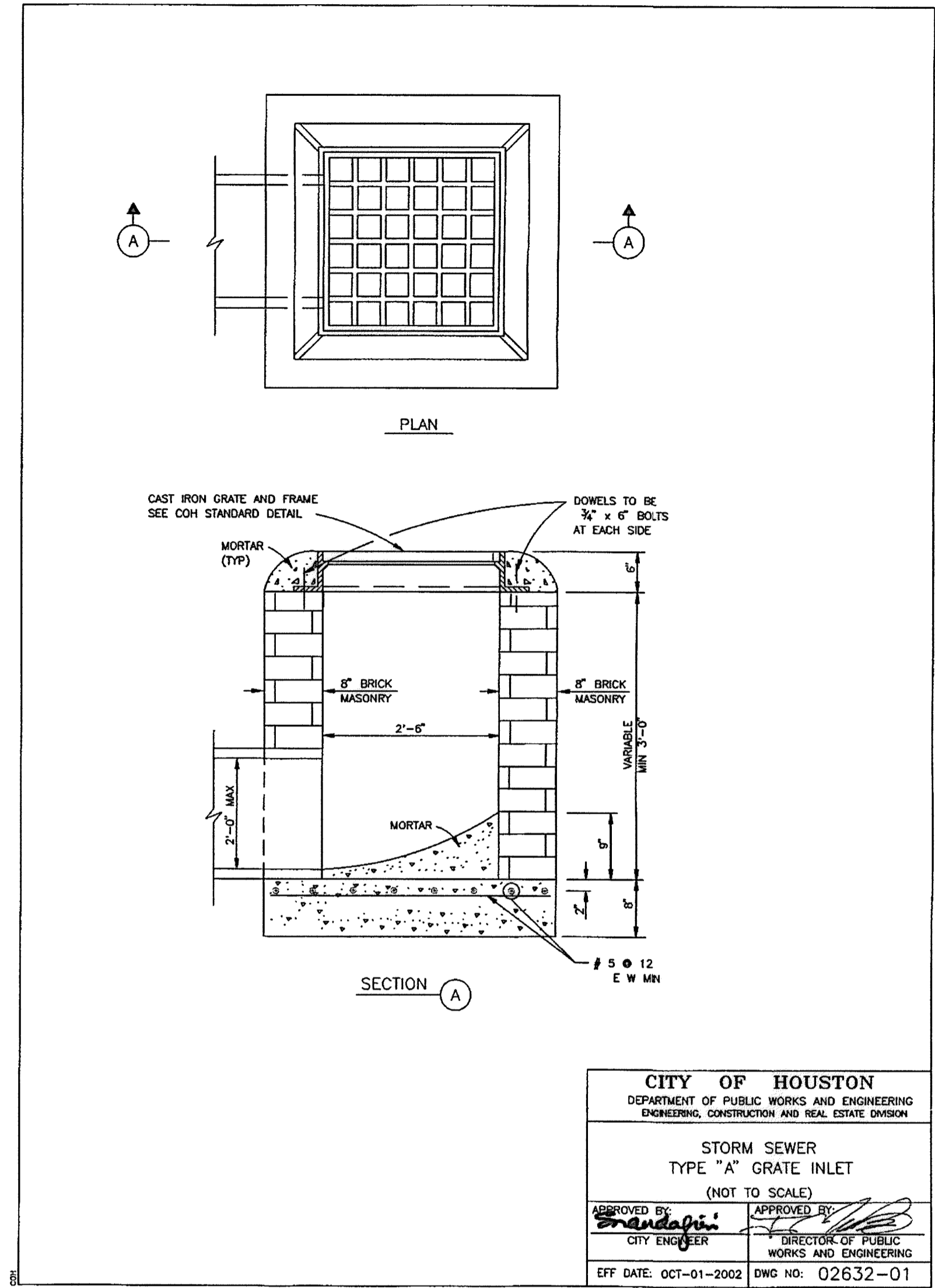
SHEET: 48 OF 226

FACILITY: CITY DWG. NO.

APR. REVISIONS No. DATE 21-29-03 PM MUGhr1e



NO.	DATE	REVISIONS



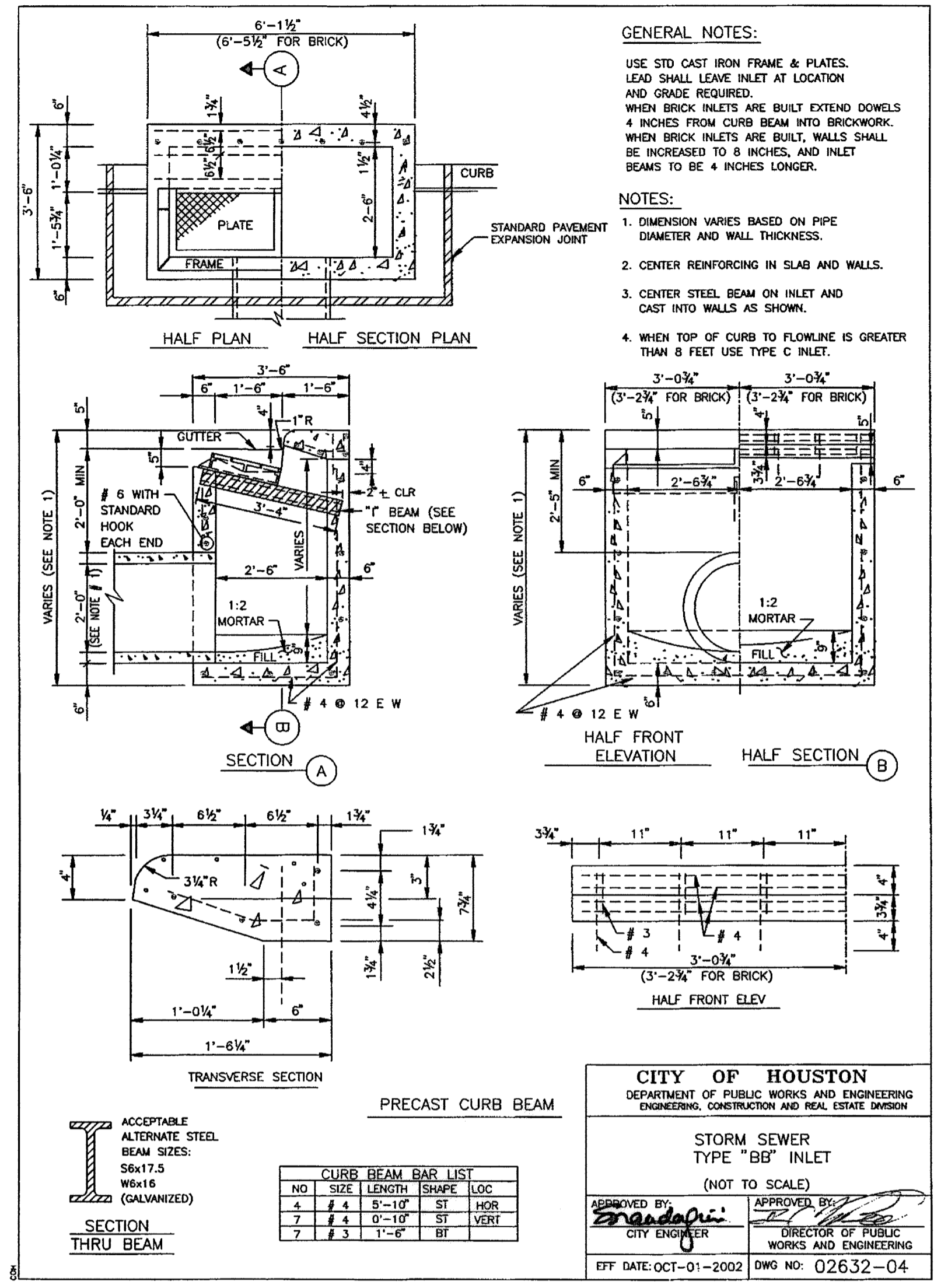
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION

**STORM SEWER  
 TYPE "A" GRATE INLET  
 (NOT TO SCALE)**

APPROVED BY: *[Signature]*  
 CITY ENGINEER

APPROVED BY: *[Signature]*  
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: OCT-01-2002 DWG NO: 02632-01



**GENERAL NOTES:**

USE STD CAST IRON FRAME & PLATES.  
 LEAD SHALL LEAVE INLET AT LOCATION AND GRADE REQUIRED.  
 WHEN BRICK INLETS ARE BUILT EXTEND DOWELS 4 INCHES FROM CURB BEAM INTO BRICKWORK.  
 WHEN BRICK INLETS ARE BUILT, WALLS SHALL BE INCREASED TO 8 INCHES, AND INLET BEAMS TO BE 4 INCHES LONGER.

**NOTES:**

1. DIMENSION VARIES BASED ON PIPE DIAMETER AND WALL THICKNESS.
2. CENTER REINFORCING IN SLAB AND WALLS.
3. CENTER STEEL BEAM ON INLET AND CAST INTO WALLS AS SHOWN.
4. WHEN TOP OF CURB TO FLOWLINE IS GREATER THAN 8 FEET USE TYPE C INLET.

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION

**STORM SEWER  
 TYPE "BB" INLET  
 (NOT TO SCALE)**

APPROVED BY: *[Signature]*  
 CITY ENGINEER

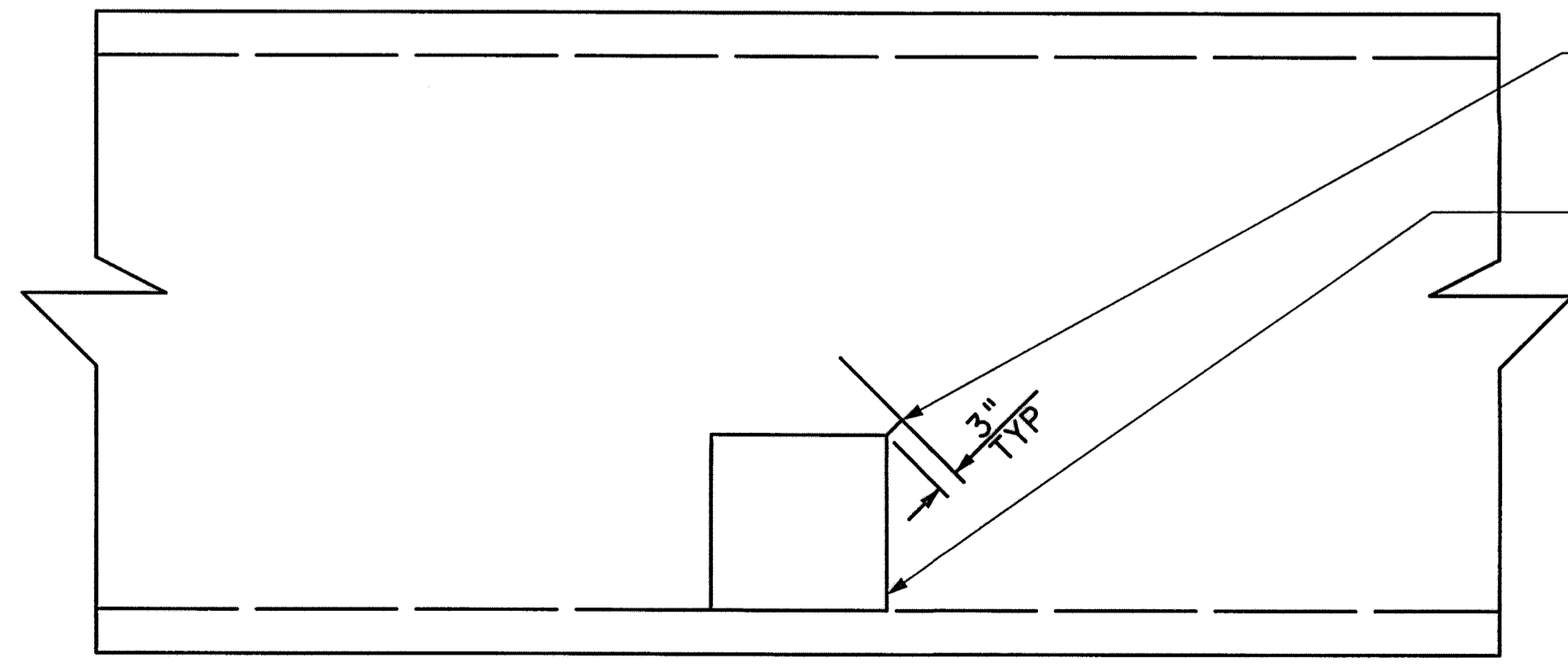
APPROVED BY: *[Signature]*  
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: OCT-01-2002 DWG NO: 02632-04

ACCEPTABLE ALTERNATE STEEL BEAM SIZES: S6x17.5 W6x16 (GALVANIZED)

SECTION THRU BEAM

NO	SIZE	LENGTH	SHAPE	LOC
4	# 4	5'-10"	ST	HOR
7	# 4	0'-10"	ST	VERT
7	# 3	1'-6"	BT	



**EQUALIZER DETAIL**  
 N. T. S.

- PROVIDE 2 ADDITIONAL #4 BARS X 2'-0" (1 IN EACH FACE OF WALL) AT TOP OF CORNERS OF 2' X 2' EQUALIZER
- 2' X 2' EQUALIZER OR 30" DIA (MIN)
- NOTE:**
1. SPACE EQUALIZERS AT PROPOSED PIPE JUNCTIONS AND AT 100-FT (MIN) INTERVALS FROM THESE JUNCTION LOCATIONS.
  2. PROVIDE EQUALIZER LOCATIONS WITH BOX CULVERT LAYOUTS FOR APPROVAL OF ENGINEER PRIOR TO CONSTRUCTION.
  3. CONTRACTOR MAY PROVIDE ALTERNATE EQUALIZER FOR APPROVAL OF ENGINEER.

9-12-14

Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEQ A DALY COMPANY

**LUMPKIN ROAD**  
 N-T17000-0012-3  
**STANDARD DRAINAGE DETAILS**  
 SHEET 2 OF 4

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

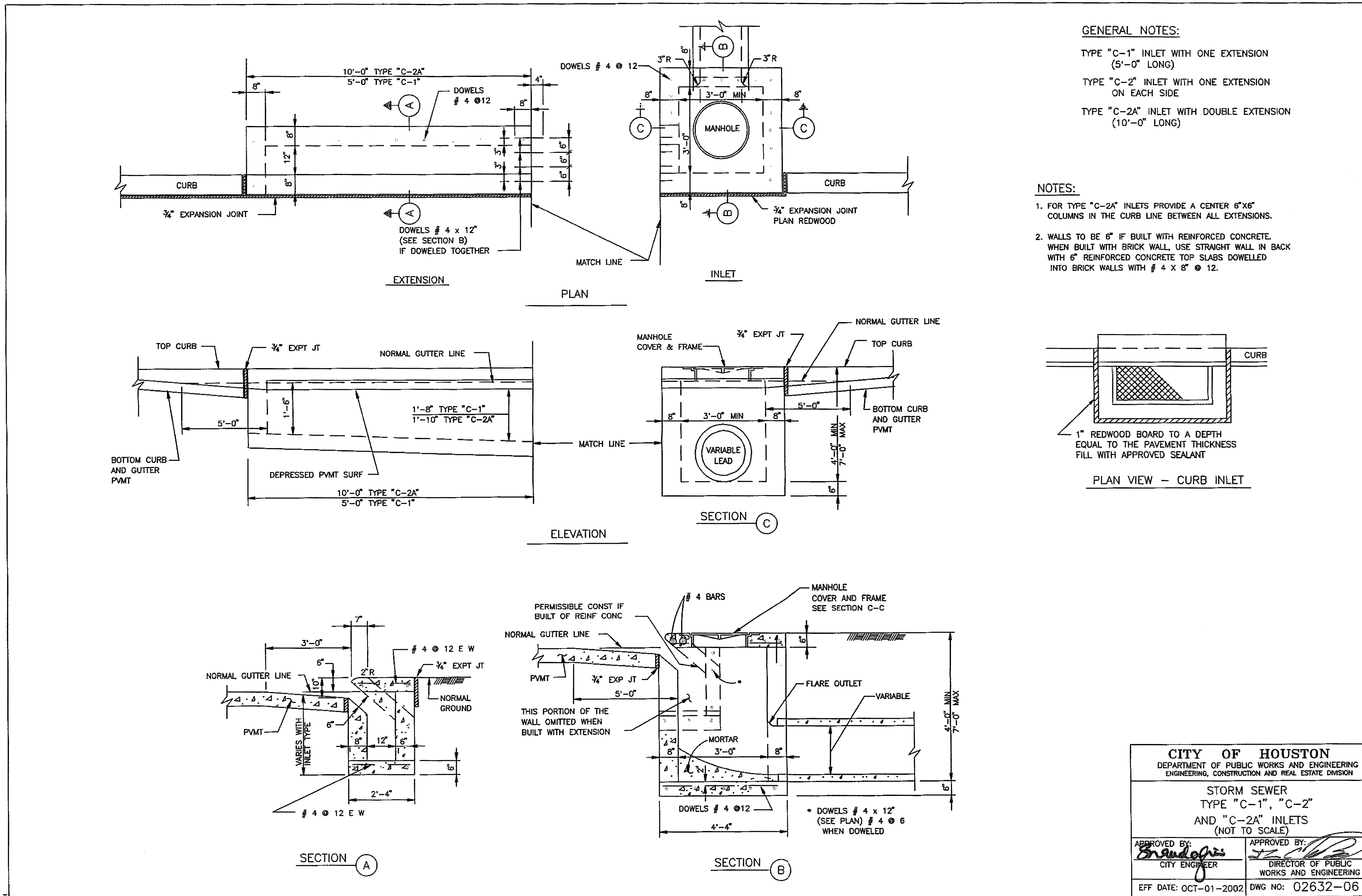
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO.:

DRAWING SCALE:

VERT: NOT TO SCALE  
 HORZ:

SHEET: 49 OF 226



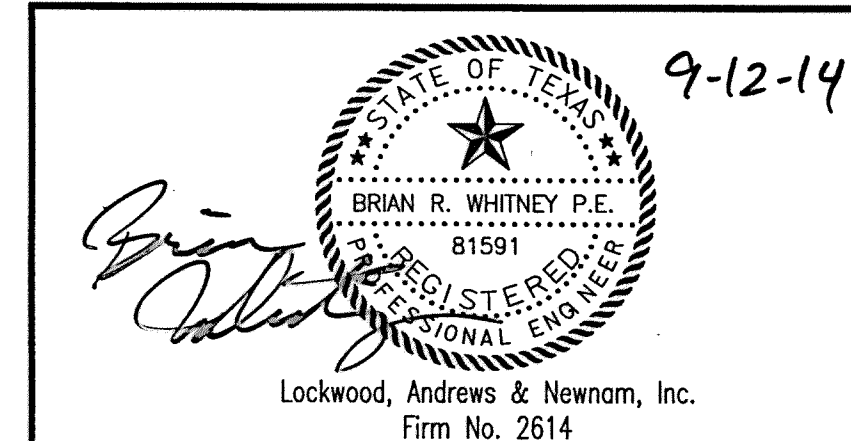
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION

**STORM SEWER**  
 TYPE "C-1", "C-2"  
 AND "C-2A" INLETS  
 (NOT TO SCALE)

APPROVED BY: *B. Randolph*  
 CITY ENGINEER

APPROVED BY: *[Signature]*  
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: OCT-01-2002 DWG NO: 02632-06



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

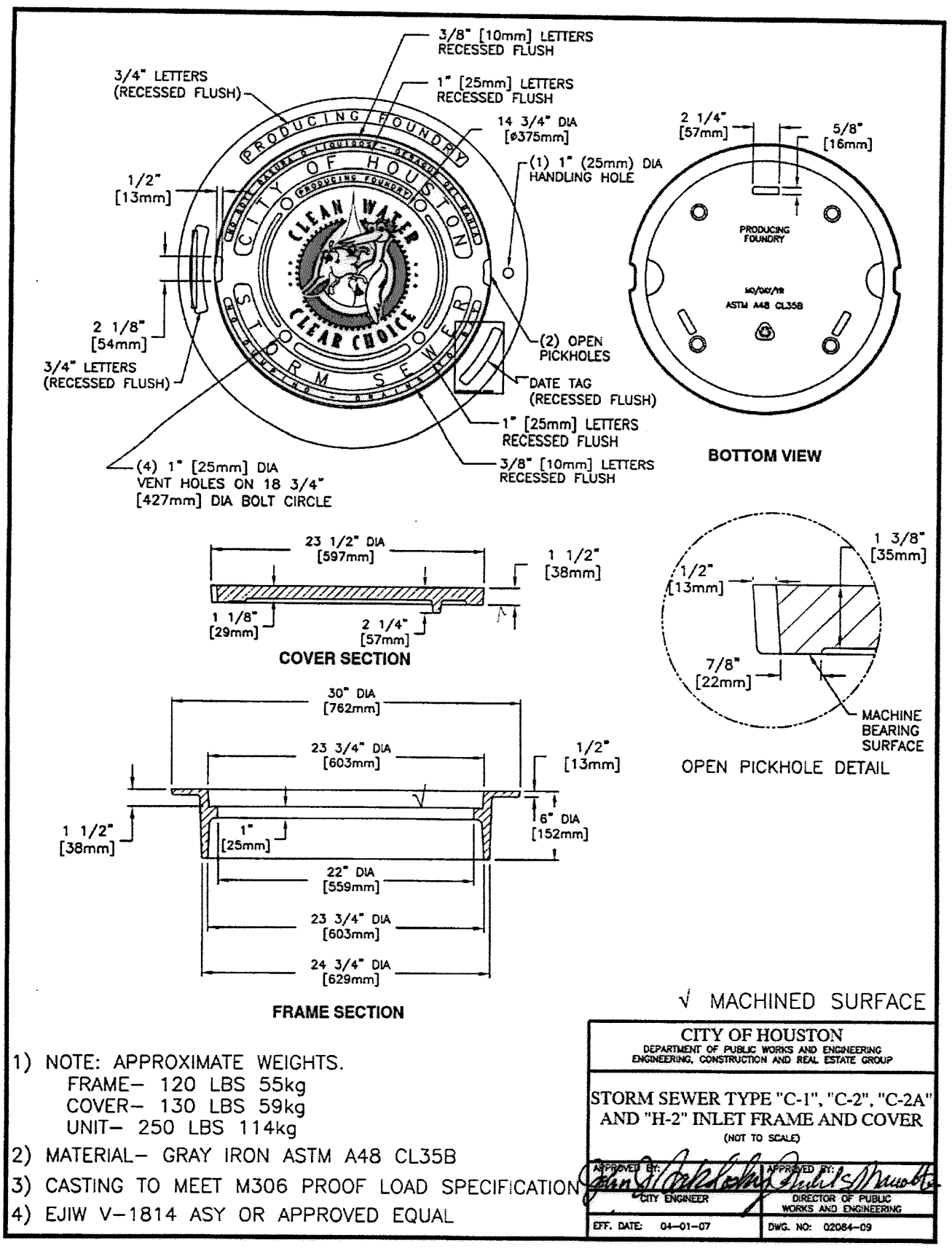
**LAN Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

**LUMPKIN ROAD**  
 N-T17000-0012-3

**STANDARD DRAINAGE DETAILS**

**SHEET 3 OF 4**  
 CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: NOT TO SCALE		
HORZ:		
SHEET:		
50 OF 226		



NOTE: APPROXIMATE WEIGHTS.  
 FRAME - 120 LBS 55kg  
 COVER - 130 LBS 59kg  
 UNIT - 250 LBS 114kg

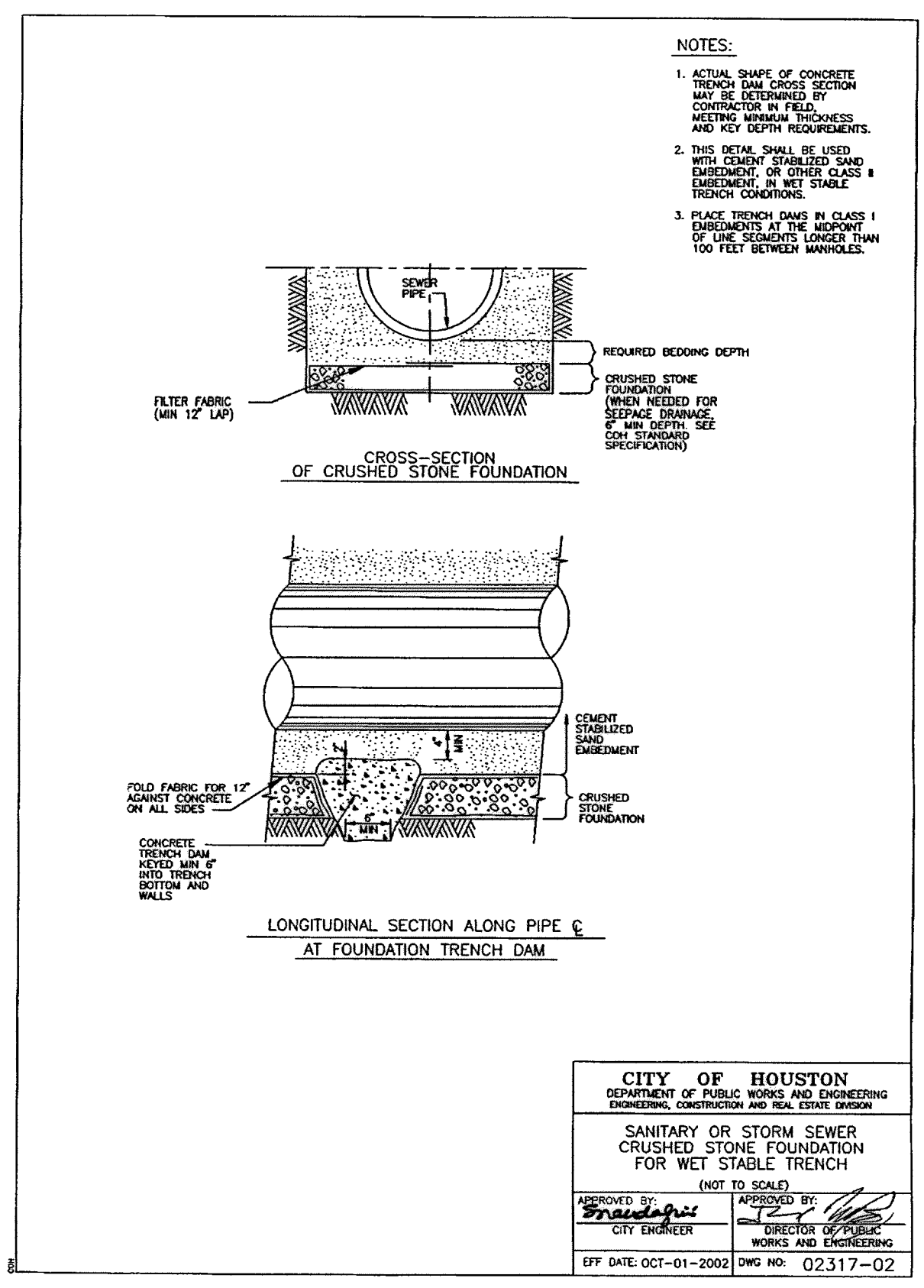
MATERIAL - GRAY IRON ASTM A48 CL35B  
 CASTING TO MEET M306 PROOF LOAD SPECIFICATION

EJUV V-1814 ASY OR APPROVED EQUAL

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION  
 STORM SEWER TYPE "C-1", "C-2", "C-2A"  
 AND "H-2" INLET FRAME AND COVER  
 (NOT TO SCALE)

APPROVED BY: [Signature]  
 CITY ENGINEER

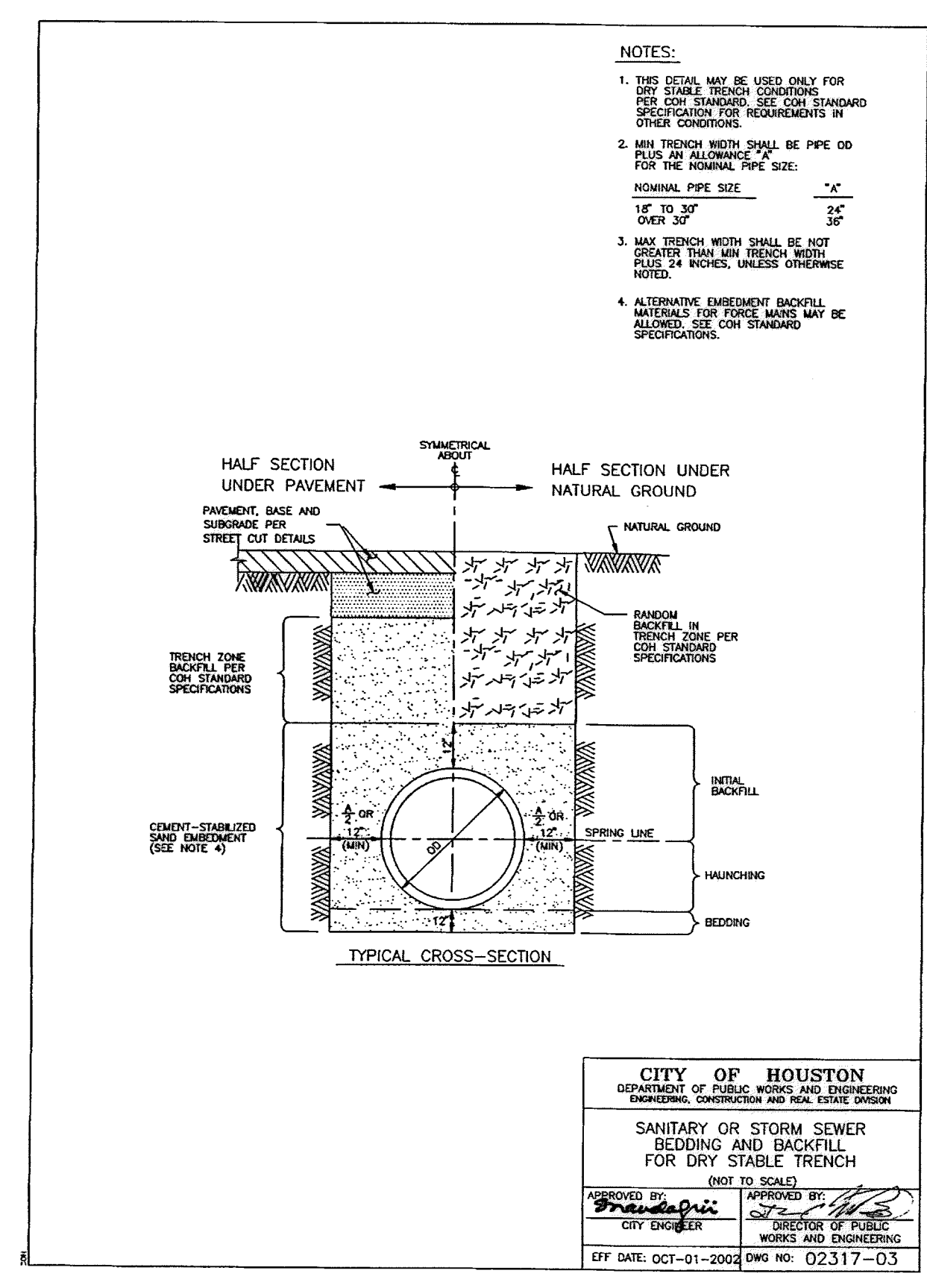
EFF. DATE: OCT-01-2002 DWG. NO. 02317-05



CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION  
 SANITARY OR STORM SEWER  
 CRUSHED STONE FOUNDATION  
 FOR WET STABLE TRENCH  
 (NOT TO SCALE)

APPROVED BY: [Signature]  
 CITY ENGINEER

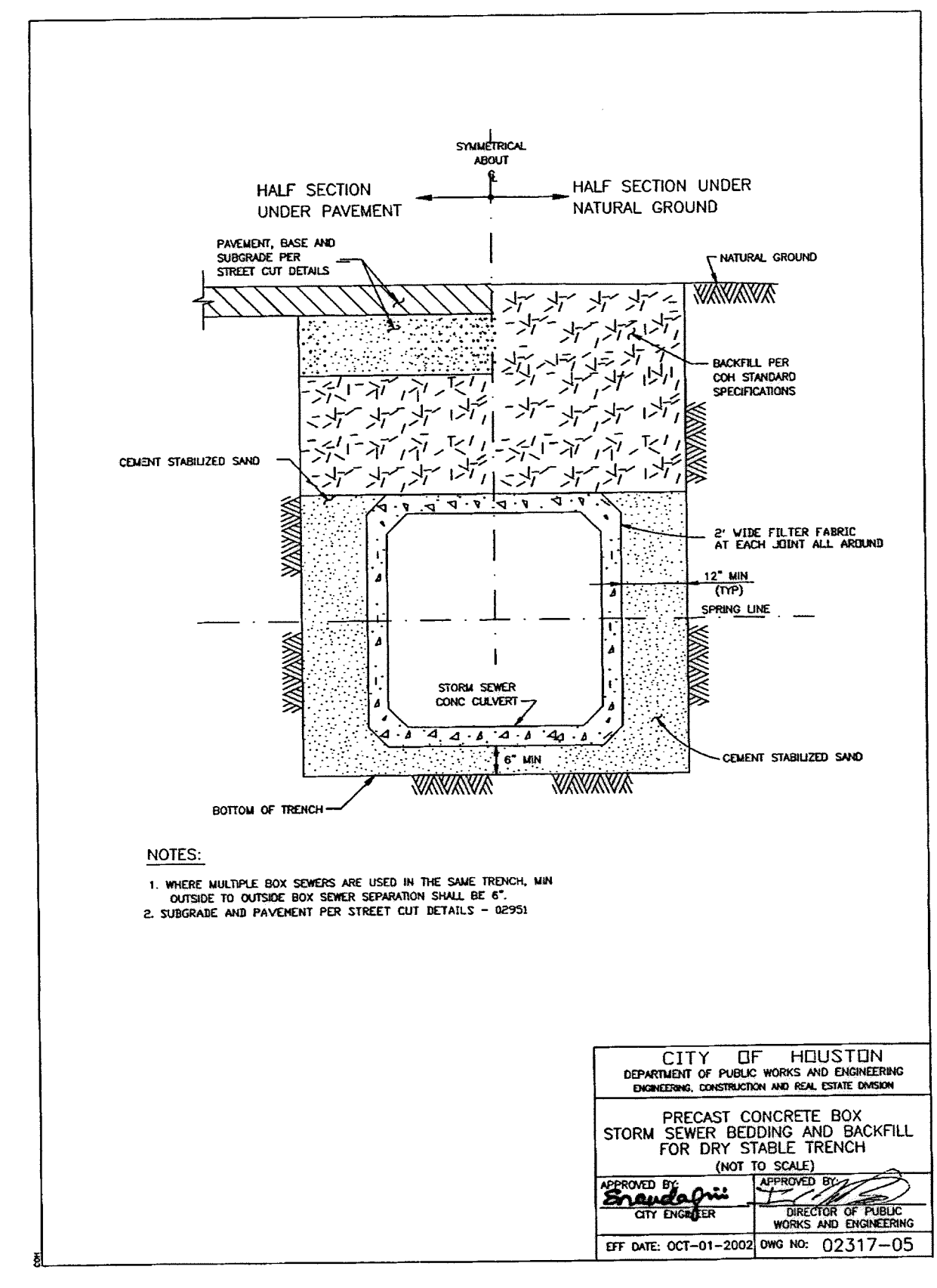
EFF. DATE: OCT-01-2002 DWG. NO. 02317-02



CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION  
 SANITARY OR STORM SEWER  
 BEDDING AND BACKFILL  
 FOR DRY STABLE TRENCH  
 (NOT TO SCALE)

APPROVED BY: [Signature]  
 CITY ENGINEER

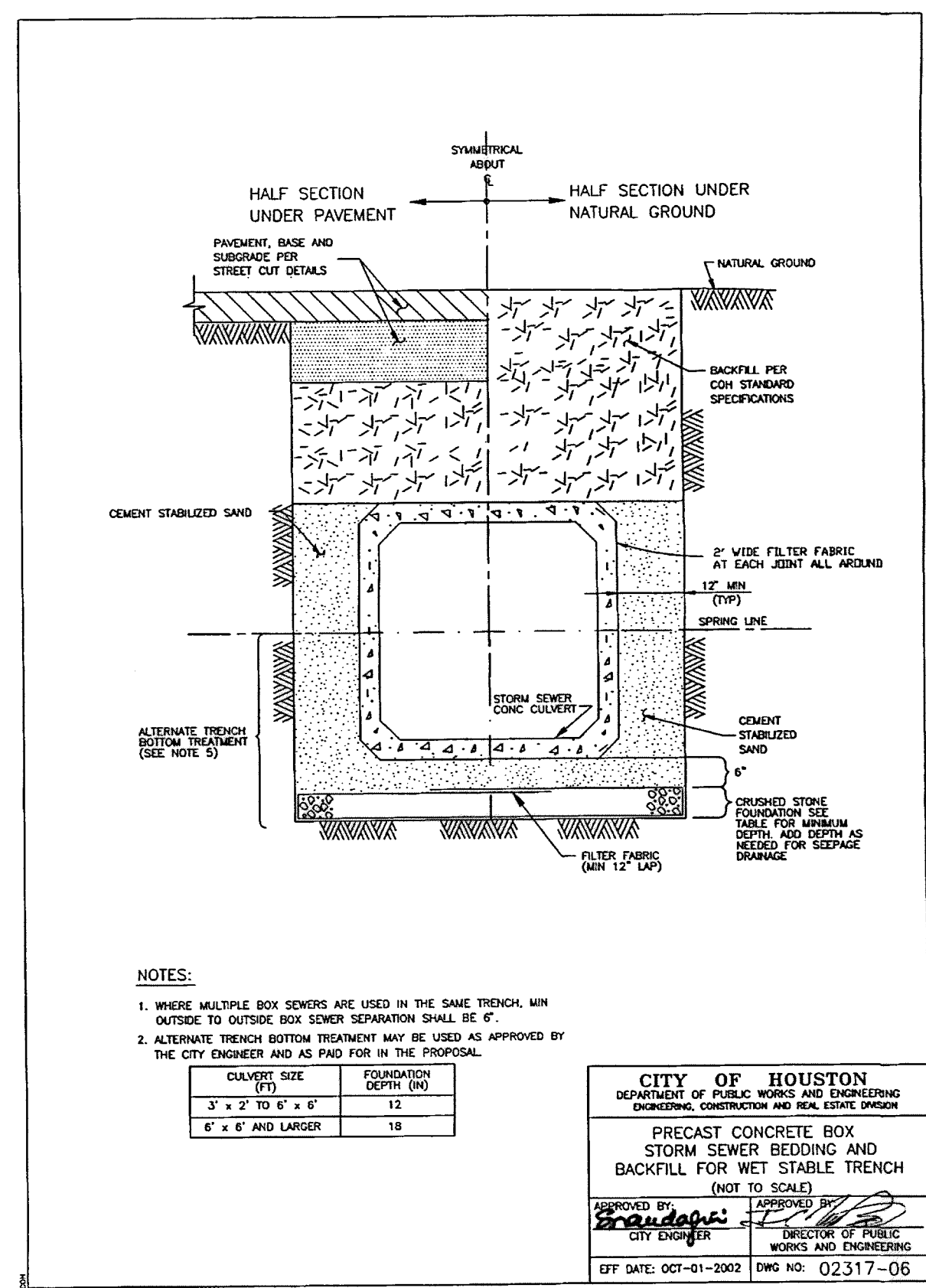
EFF. DATE: OCT-01-2002 DWG. NO. 02317-03



CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION  
 PRECAST CONCRETE BOX  
 STORM SEWER BEDDING AND BACKFILL  
 FOR DRY STABLE TRENCH  
 (NOT TO SCALE)

APPROVED BY: [Signature]  
 CITY ENGINEER

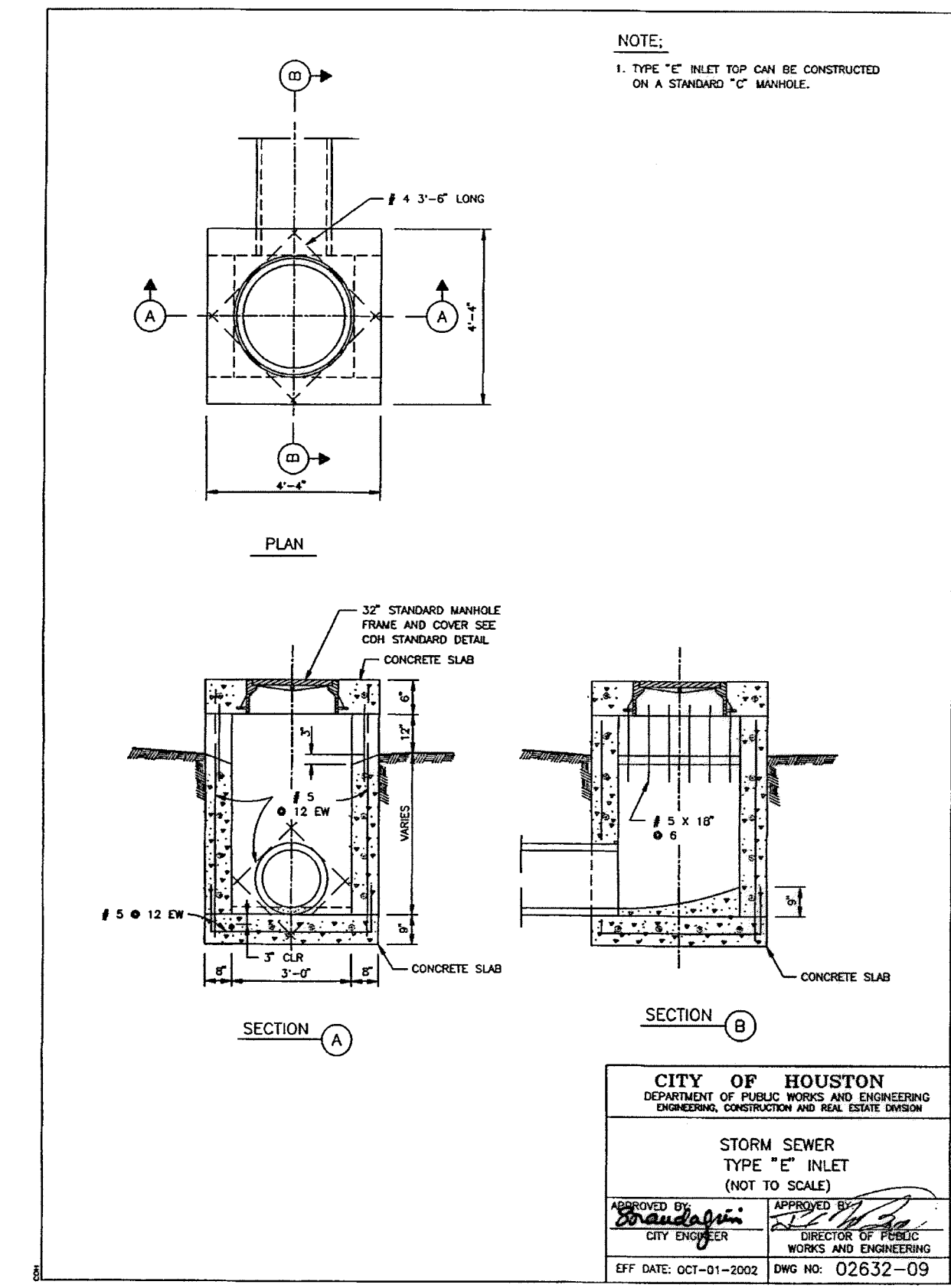
EFF. DATE: OCT-01-2002 DWG. NO. 02317-05



CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION  
 PRECAST CONCRETE BOX  
 STORM SEWER BEDDING AND  
 BACKFILL FOR WET STABLE TRENCH  
 (NOT TO SCALE)

APPROVED BY: [Signature]  
 CITY ENGINEER

EFF. DATE: OCT-01-2002 DWG. NO. 02317-06



CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION  
 STORM SEWER  
 TYPE "E" INLET  
 (NOT TO SCALE)

APPROVED BY: [Signature]  
 CITY ENGINEER

EFF. DATE: OCT-01-2002 DWG. NO. 02632-09

9-12-14

Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY  
 REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews  
 & Newnam, Inc.**  
 A LEO A DALY COMPANY

**LUMPKIN ROAD  
 N-T17000-0012-3**

**STANDARD DRAINAGE DETAILS**

**SHEET 4 OF 4**

**CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING**

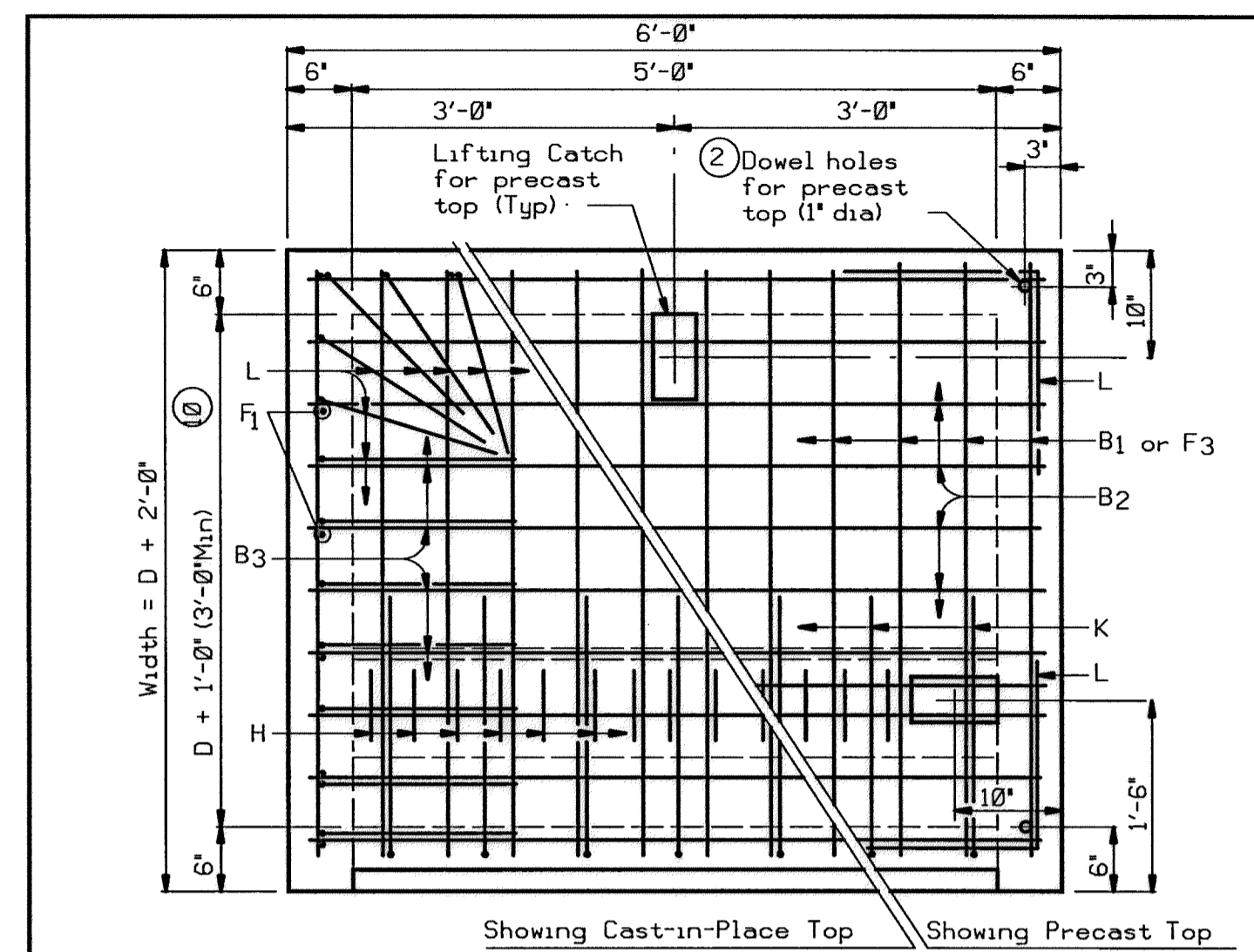
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

FILE NO.:

DRAWING SCALE:

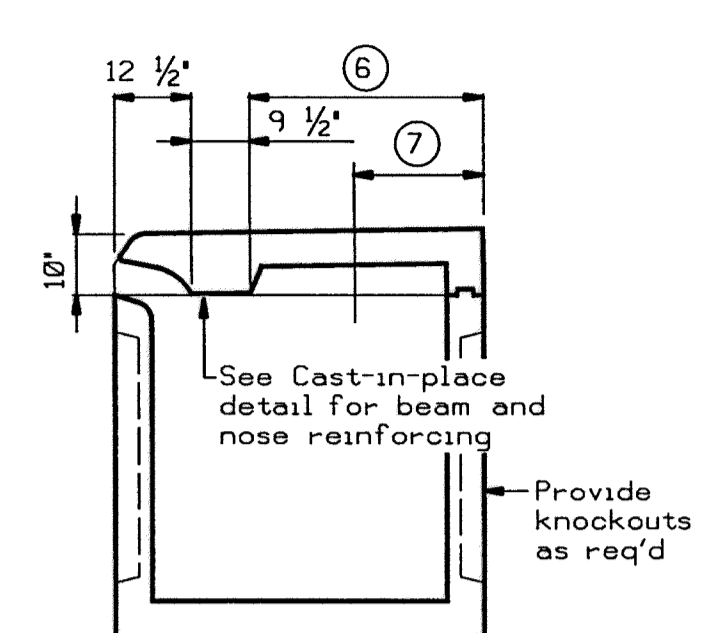
VERT: NOT TO SCALE  
 HORZ: NOT TO SCALE

SHEET: 51 OF 226



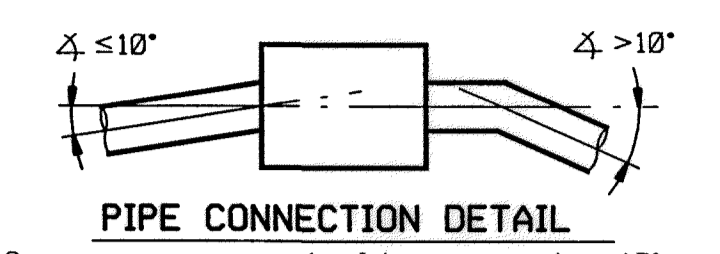
Showing Cast-in-Place Top      Showing Precast Top

PLAN



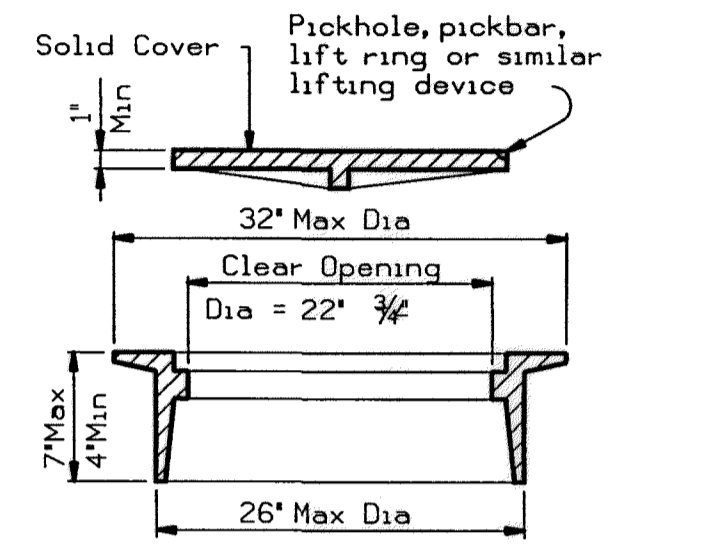
PREFABRICATED INLET

⑥ For reinforcing steel and dimensions not shown, see fabricator's shop drawings. Structure shall be of the size required to accommodate size of pipe shown elsewhere in the plans. Length of inlet = 6'-0"



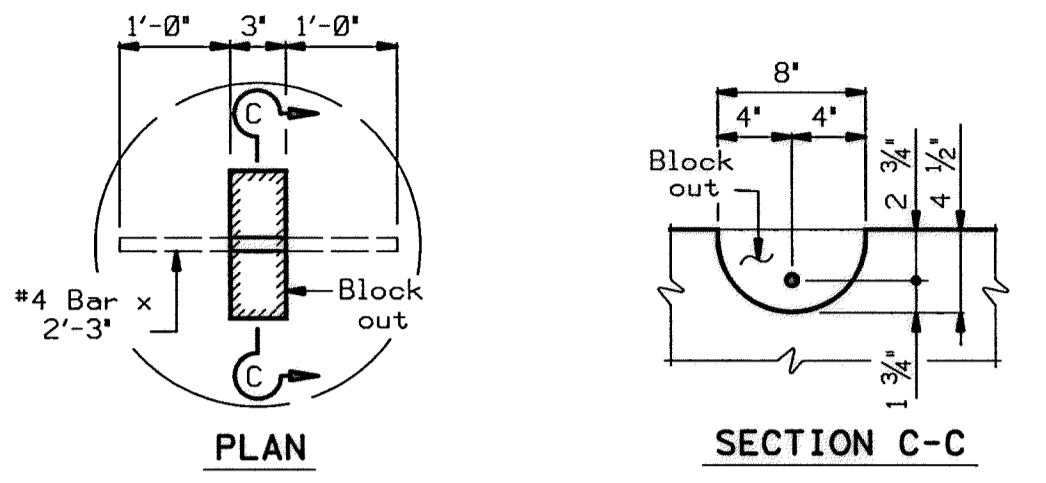
PIPE CONNECTION DETAIL

Connecting pipes should enter within 10° of normal to inlet wall. If necessary, pipe elbow or curved approach alignment should be used to stay within this limit.

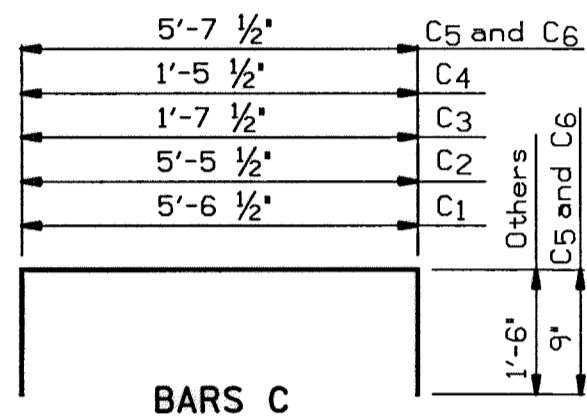


RING AND COVER DETAILS

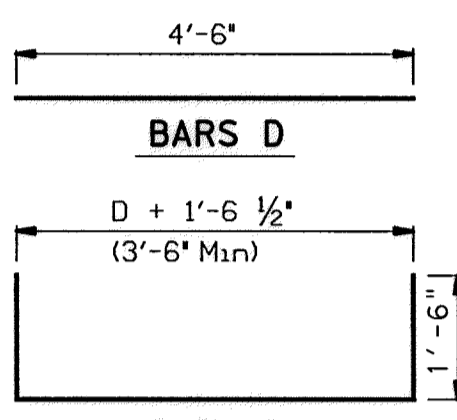
EJUI No V-1814 or Neenah No R5900-FTX



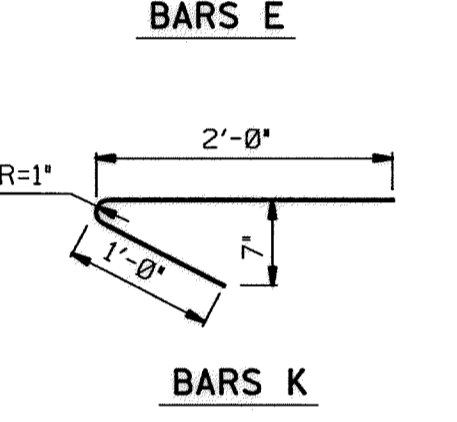
LIFTING CATCH



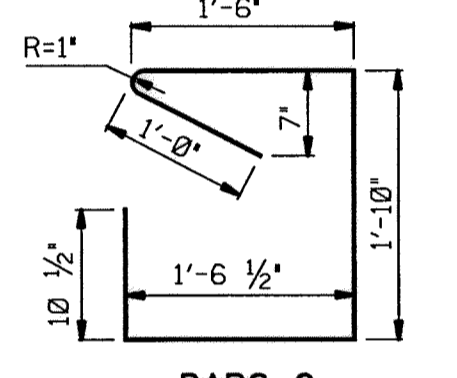
BARS C



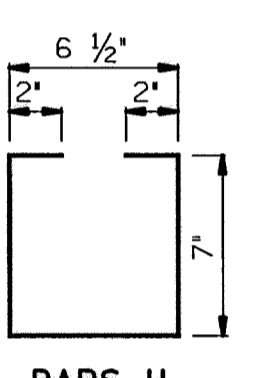
BARS D



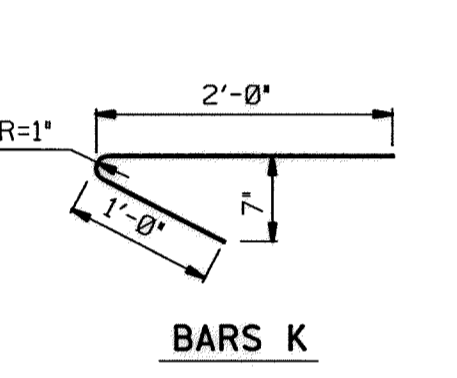
BARS E



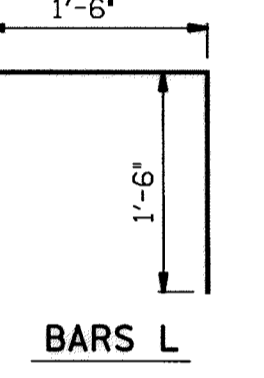
BARS G



BARS H



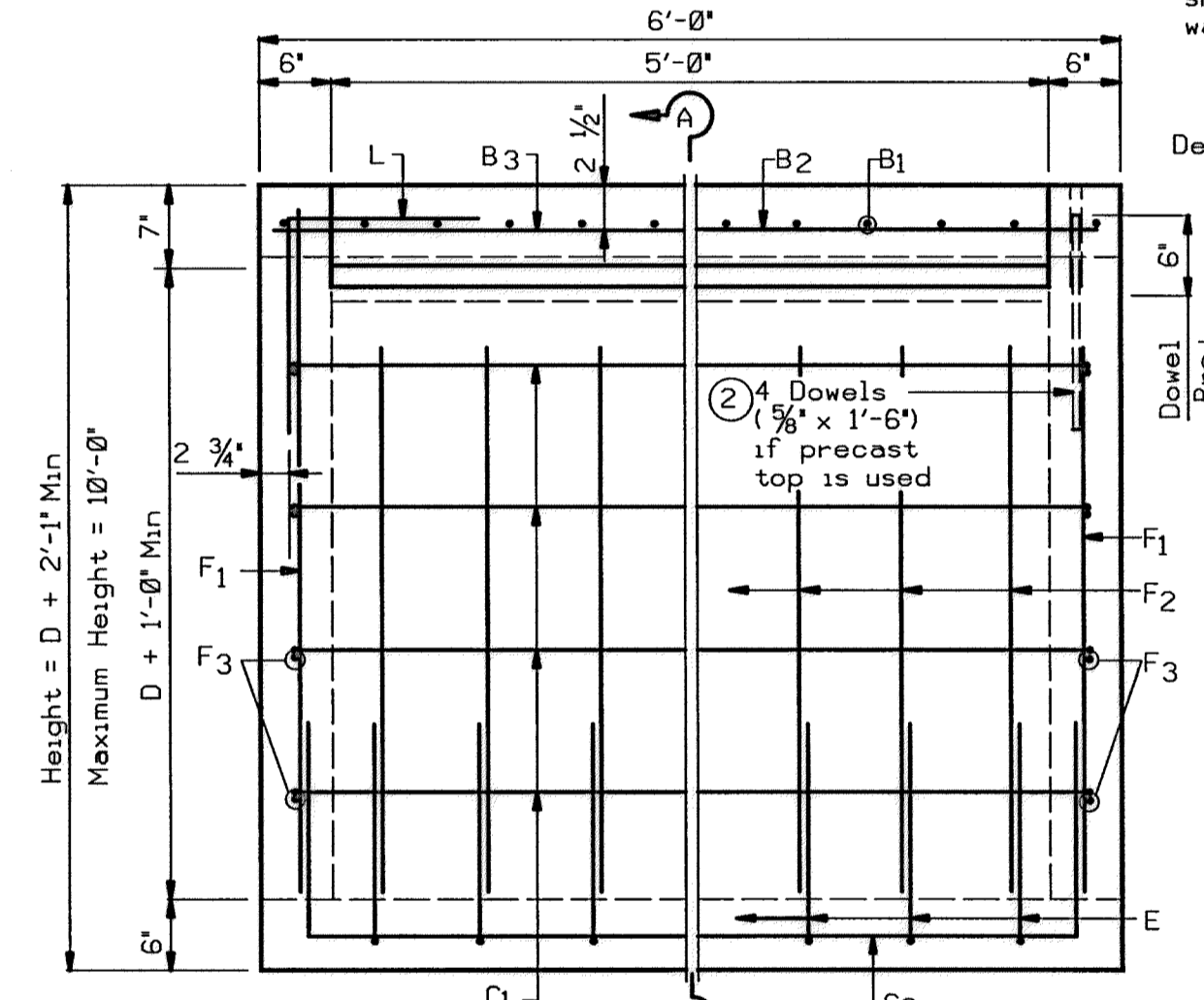
BARS K



BARS L

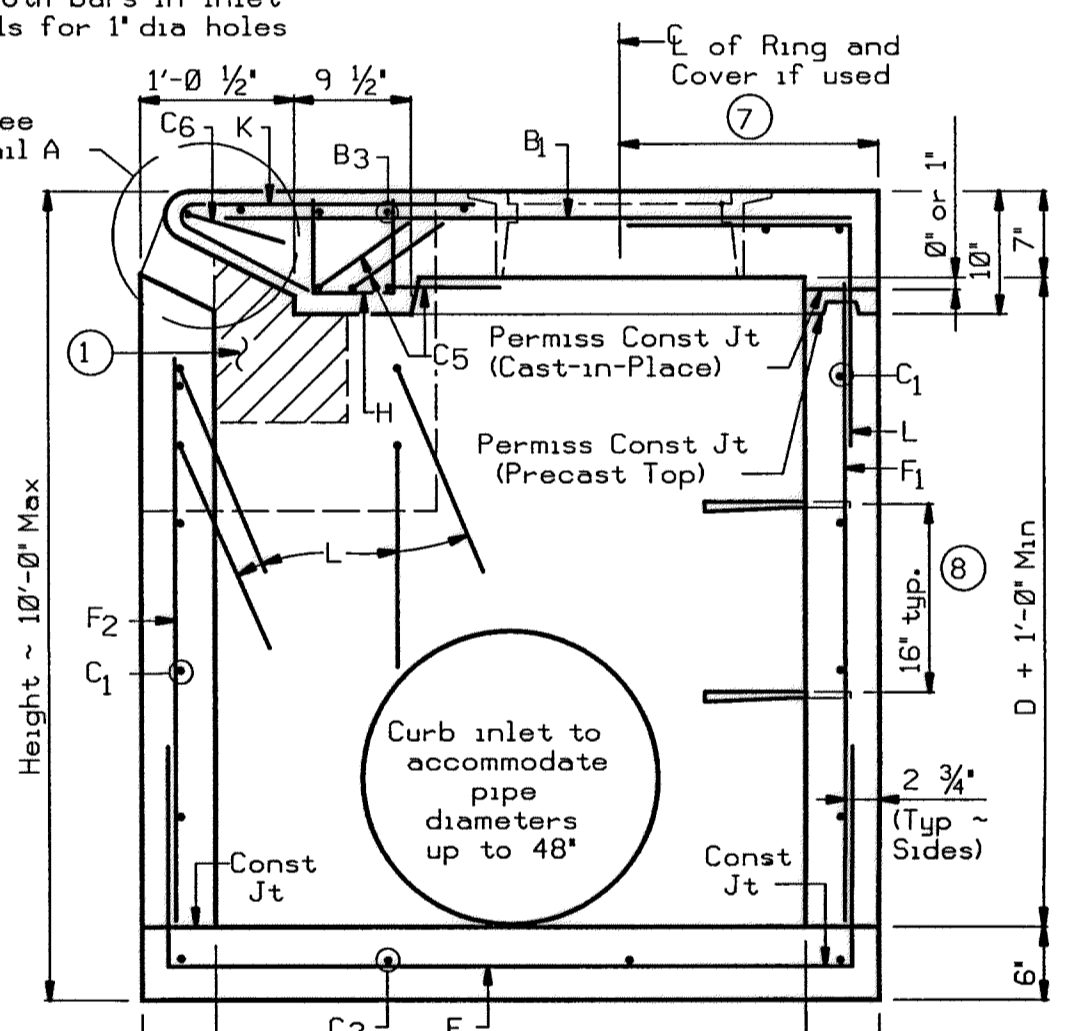
Bar	Size	Spacing
B1	#4	6"
B2	#5	6"
B3	#4	6"
C1-2	#4	12"
C3-4	#4	9"
C5	#6	9"
C6	#4	9"
D	#4	9"
E	#4	12"
F1-3	#4	12"
G	#4	6"
H	#3	4"
K	#4	9"
L	#4	6"

⑨ As shown



Showing Cast-in-Place Top      Showing Precast Top

ELEVATION

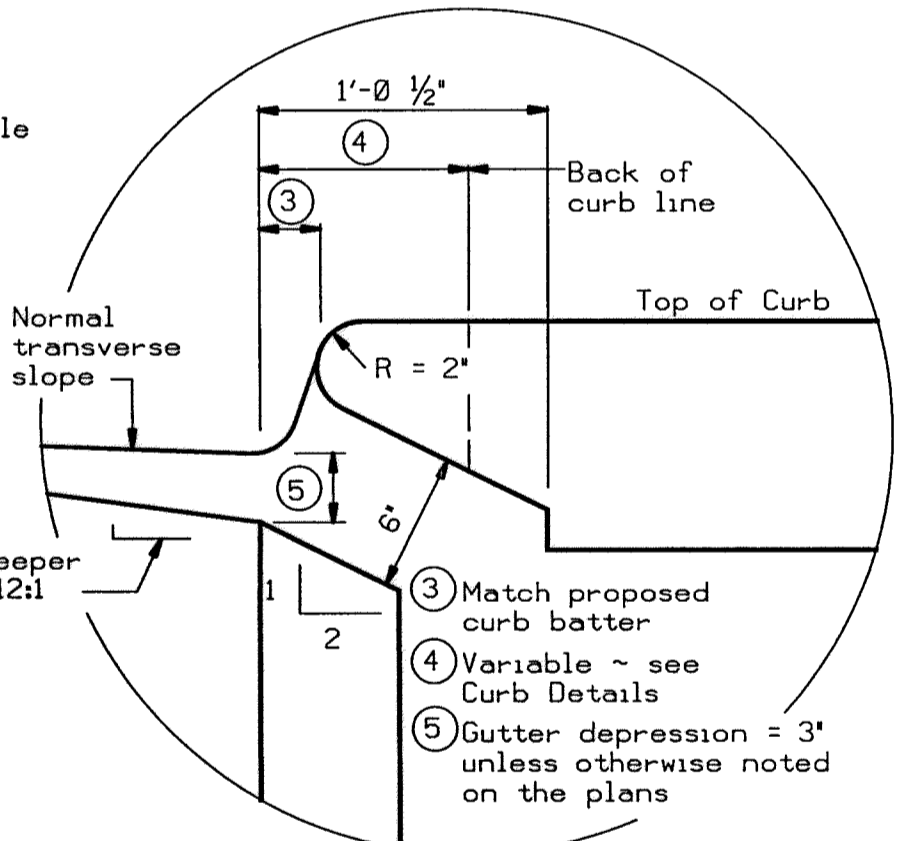


SECTION A-A

⑦ 1'-6" Min, 1'-9" Max Adjust placement of Ring and Cover as necessary to avoid conflict with Bars H.

⑧ Ladder rung is Ductile Iron, Aluminum or Cast Iron.

⑩ 4'-0" Min when Ring and Cover are used.



DETAIL A

GENERAL NOTES:

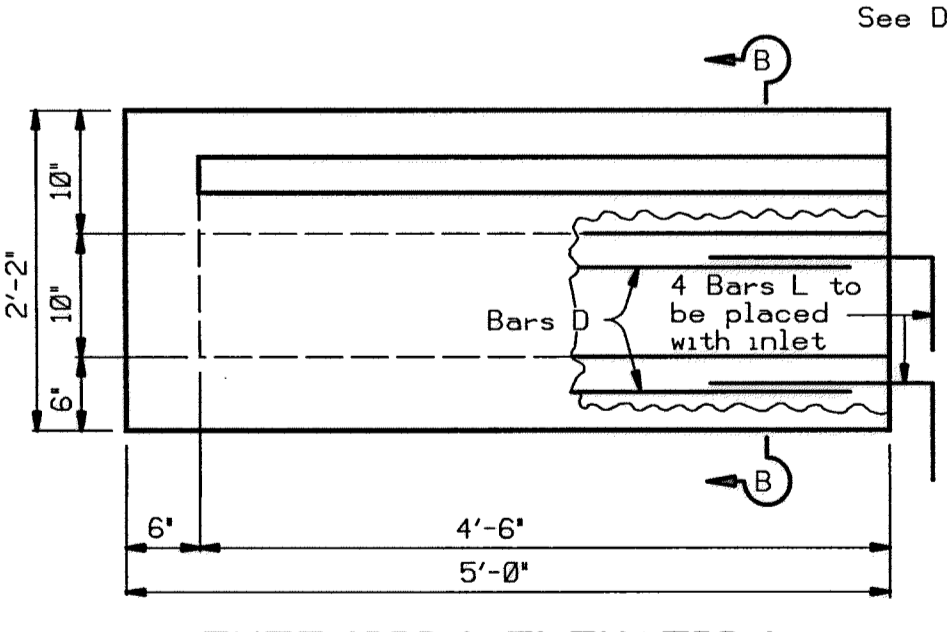
No alternate designs nor alternate details shall be permitted for precast or cast in place inlets.

Quantities shown herein are for Contractor's information only. Unless otherwise shown in the plans, payment will be made for each inlet of the type specified and for each extension. Each five foot curb opening of extension is considered 'one extension' regardless of whether placed monolithically or precast. Extension length shall be in multiples of 5 feet.

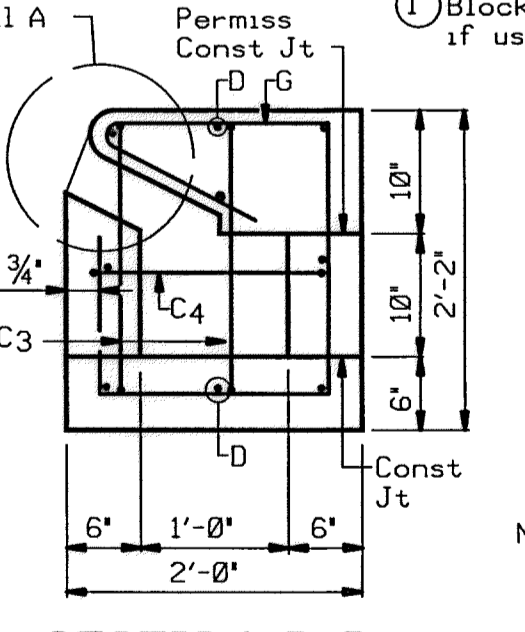
Engineer has the option of specifying cast-in-place top with ring and cover or removable precast top as specified elsewhere in plans. Shop drawings are required for Precast Inlets.

In areas of conflict between reinforcing steel, blockouts, pipes, anchor bolts or other reinforcing steel, the reinforcement shall be bent or adjusted to clear as directed by the Engineer.

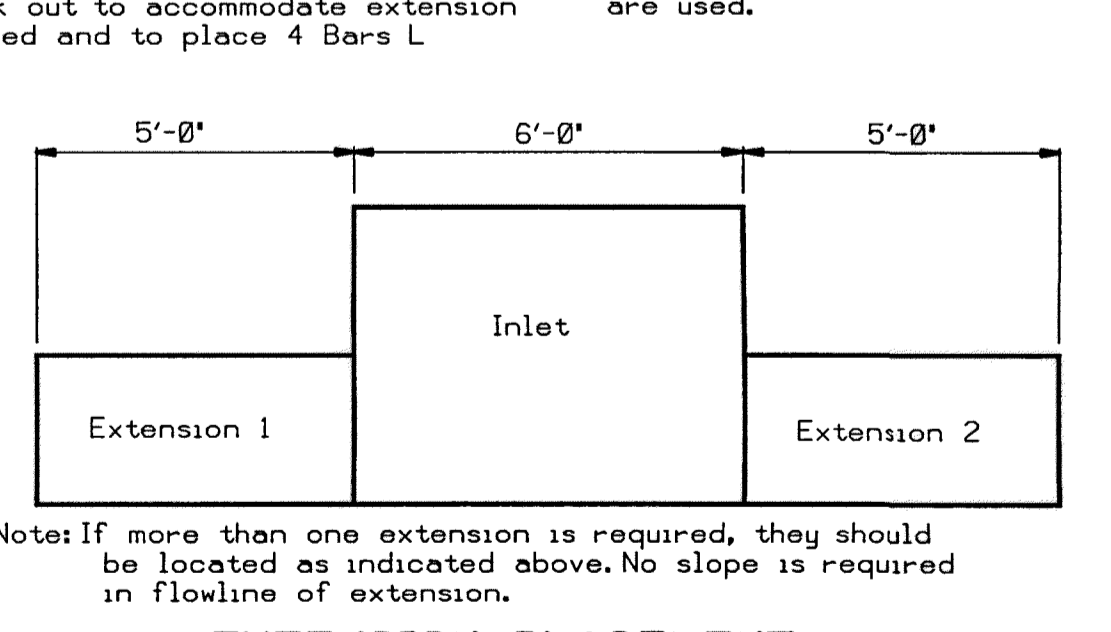
Ring and cover shall conform to the requirements of AASHTO M306, 'Standard Specification for Drainage Structure Castings'. Materials shall conform to ASTM A48, Class 35B for gray iron castings or ASTM A536, Grade 65-45-12 for ductile iron castings. Aluminum alloy castings shall not be permitted.



EXTENSION ELEVATION



SECTION B-B



EXTENSION PLACEMENT

Note: If more than one extension is required, they should be located as indicated above. No slope is required in flowline of extension.

INSTALL A 3 FT. (HORIZ.) x 6 IN. (VERT.) OPENING ON THE BACK OF THE INLET WHEN SPECIFIED ELSEWHERE ON THE PLANS. MOVE STEPS AS NEEDED. NO REINFORCING ON OPENING/ON 2 IN. ADJACENT TO OPENING.

DESIGNERS: CLARIFY FLOWLINE OF OPENING AND INCLUDE OPENING IN HYDRAULIC CALCULATIONS.

D = Diameter  
R = Radius

**Texas Department of Transportation**  
Houston District

**CURB INLET TYPE C**  
(WITH OR WITHOUT EXTENSION)

**HIL-C**

FILE: STDD1.DGN	DN: TXDOT	CR: TXDOT	OW: TXDOT	CK: TXDOT	ST: STD
© TXDOT Feb 2010	DIST	FED REG	PROJECT NO.	SHEET	
REVISIONS	HOUS	6		52	
2/2010 Note for alternate design added.					
2/2010 Added note concerning opening on the back of inlet.					
COUNTY	CONTROL	SECT	JOB	HIGHWAY	

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEQ A DALY COMPANY

Lumpkin Road  
N-T17000-0012-3

**CURB INLET TYPE C**  
(WITH OR WITHOUT EXTENSION)

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEQ A DALY COMPANY

Lumpkin Road  
N-T17000-0012-3

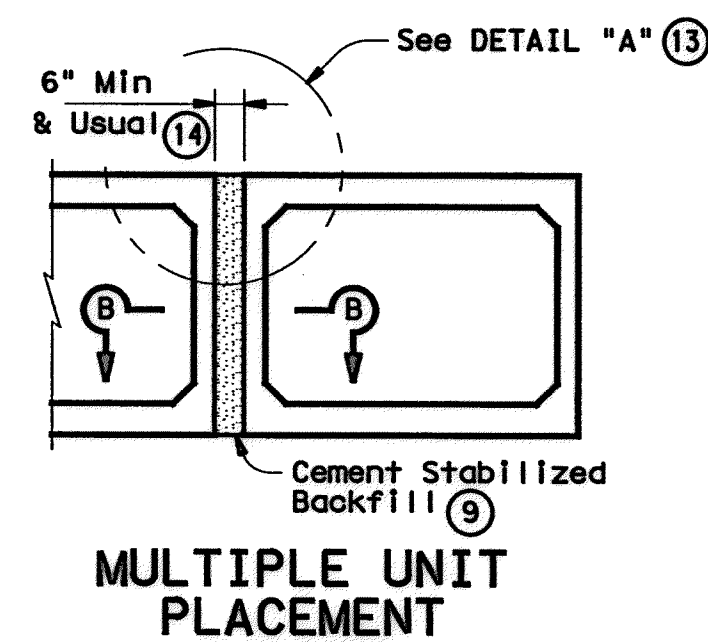
**CURB INLET TYPE C**  
(WITH OR WITHOUT EXTENSION)

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

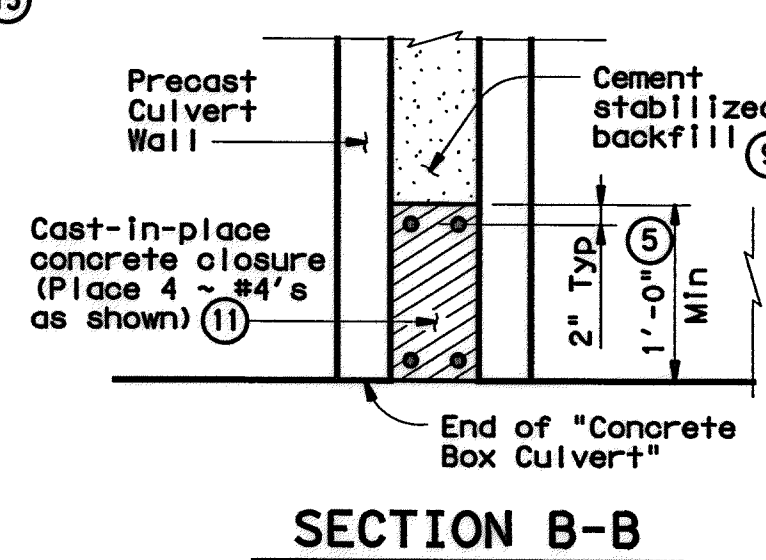
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG. NO.	
VERT: 1"=2'		
HORIZ: 1"=20'		
SHEET:	52 OF 226	

DISCLAIMER: This standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

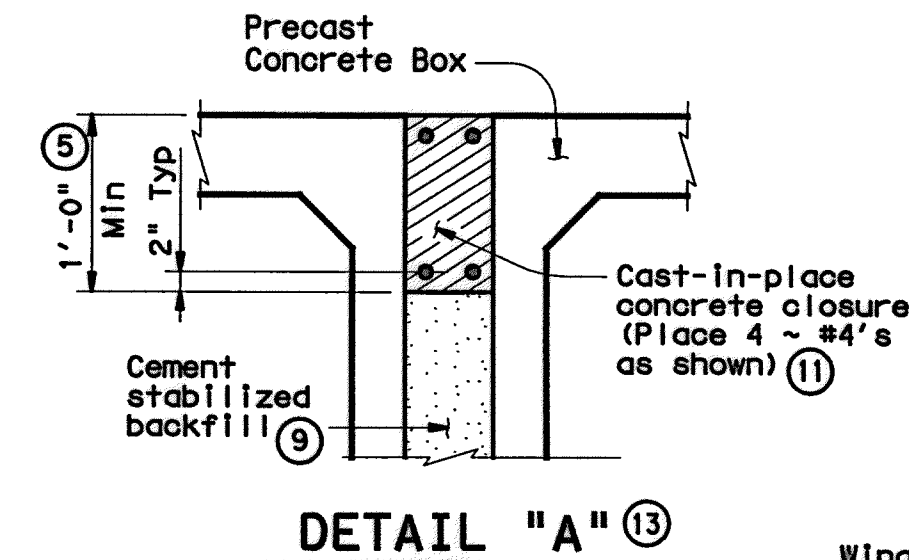
DATE: FILE:



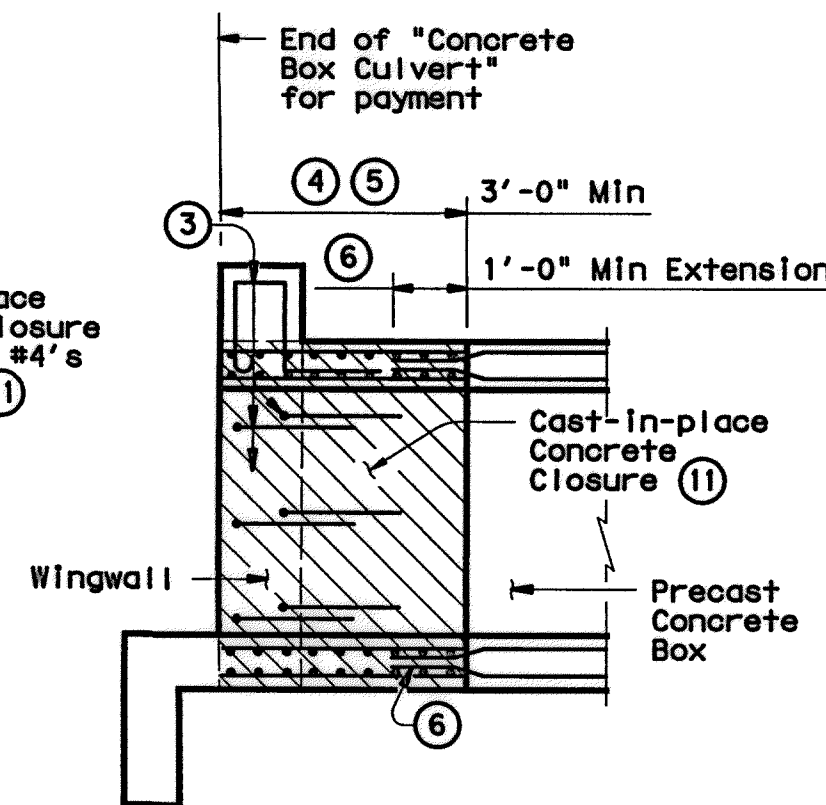
**MULTIPLE UNIT PLACEMENT**



**SECTION B-B**

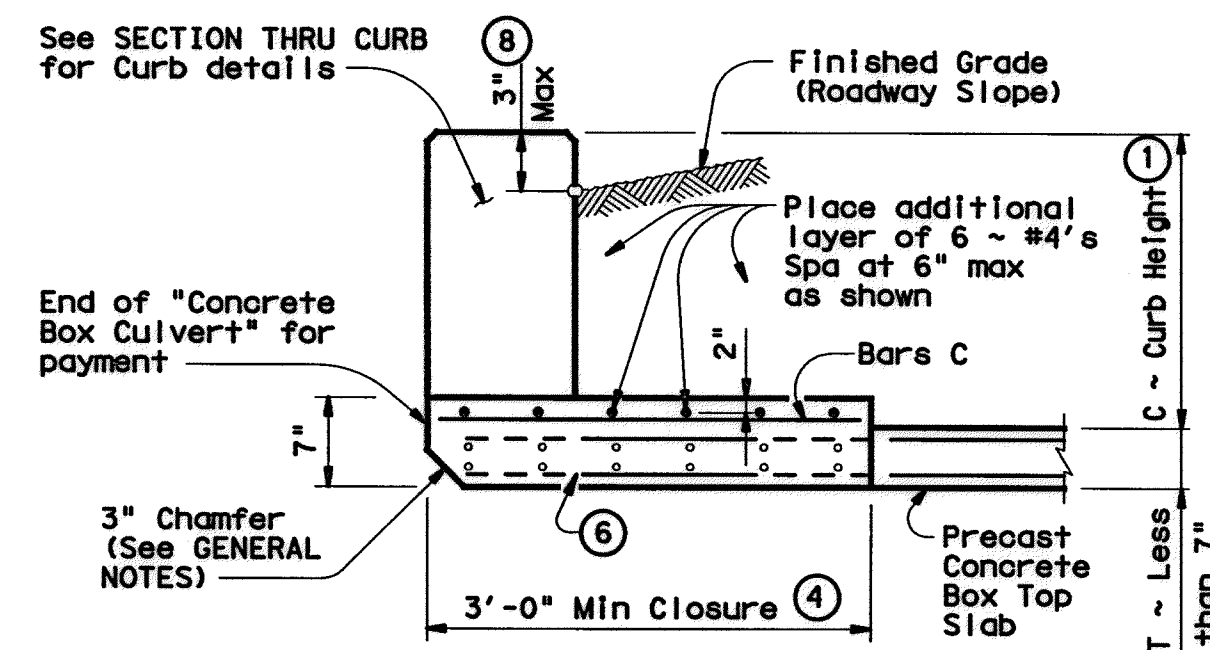


**DETAIL "A" (13)**

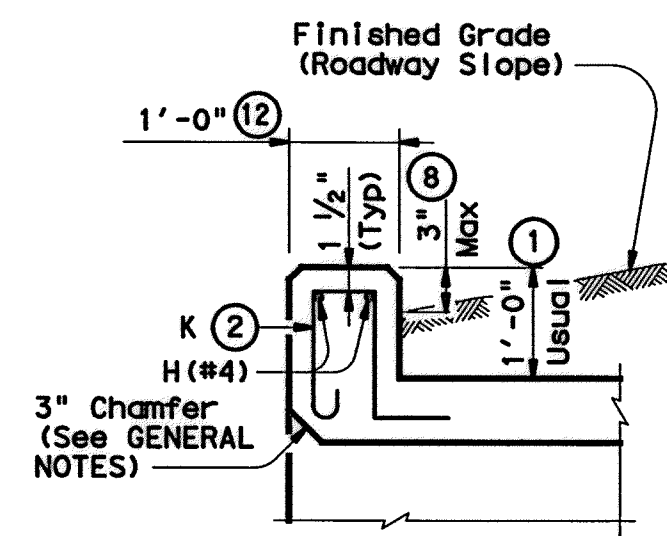


**WINGWALL CONNECTION**

(Also applies to Safety End Treatment)

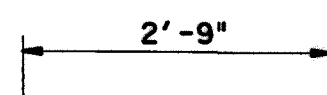


**SECTION THRU TOP SLABS LESS THAN 7"**

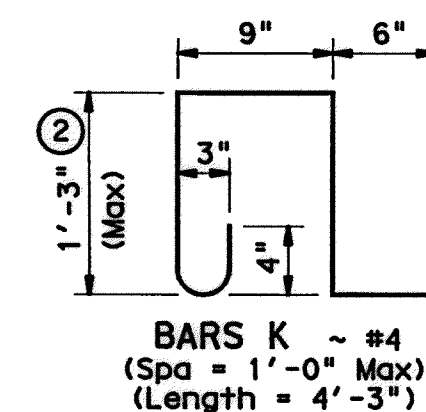


**SECTION THRU CURB**

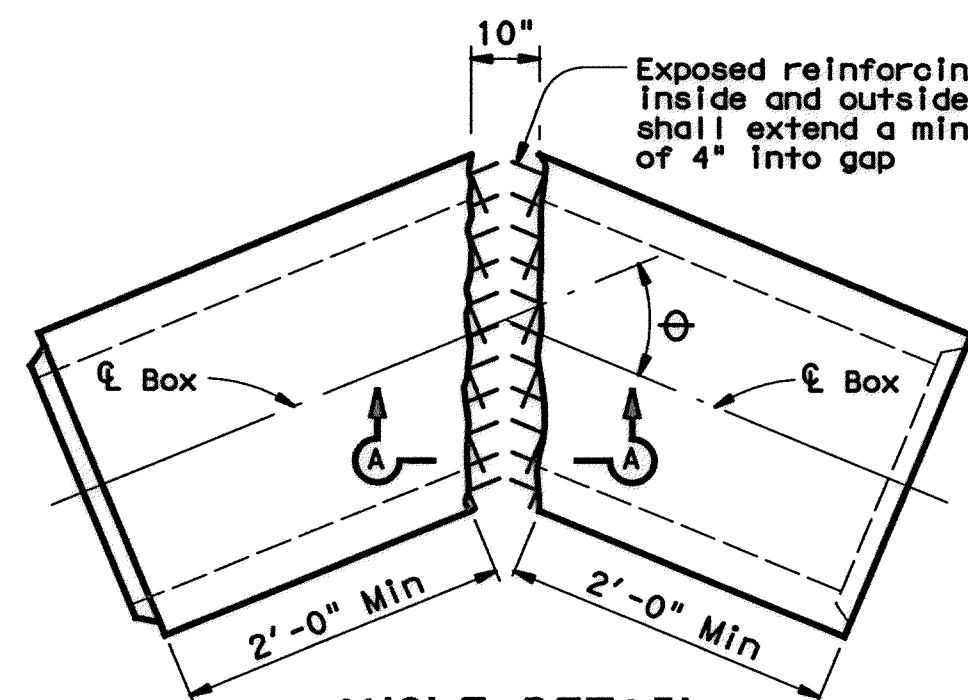
(10) QUANTITIES PER FOOT OF CURB	
Reinforcing Steel	4.18 Lb
Concrete	0.037 CY



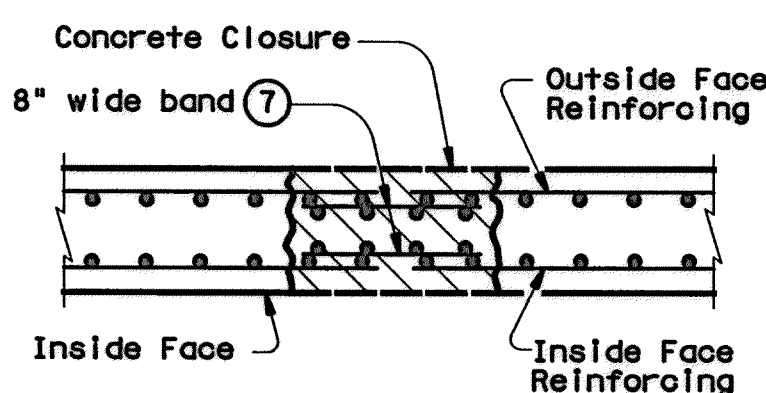
BARS C ~ #4  
(Spa = 1'-0" Max)



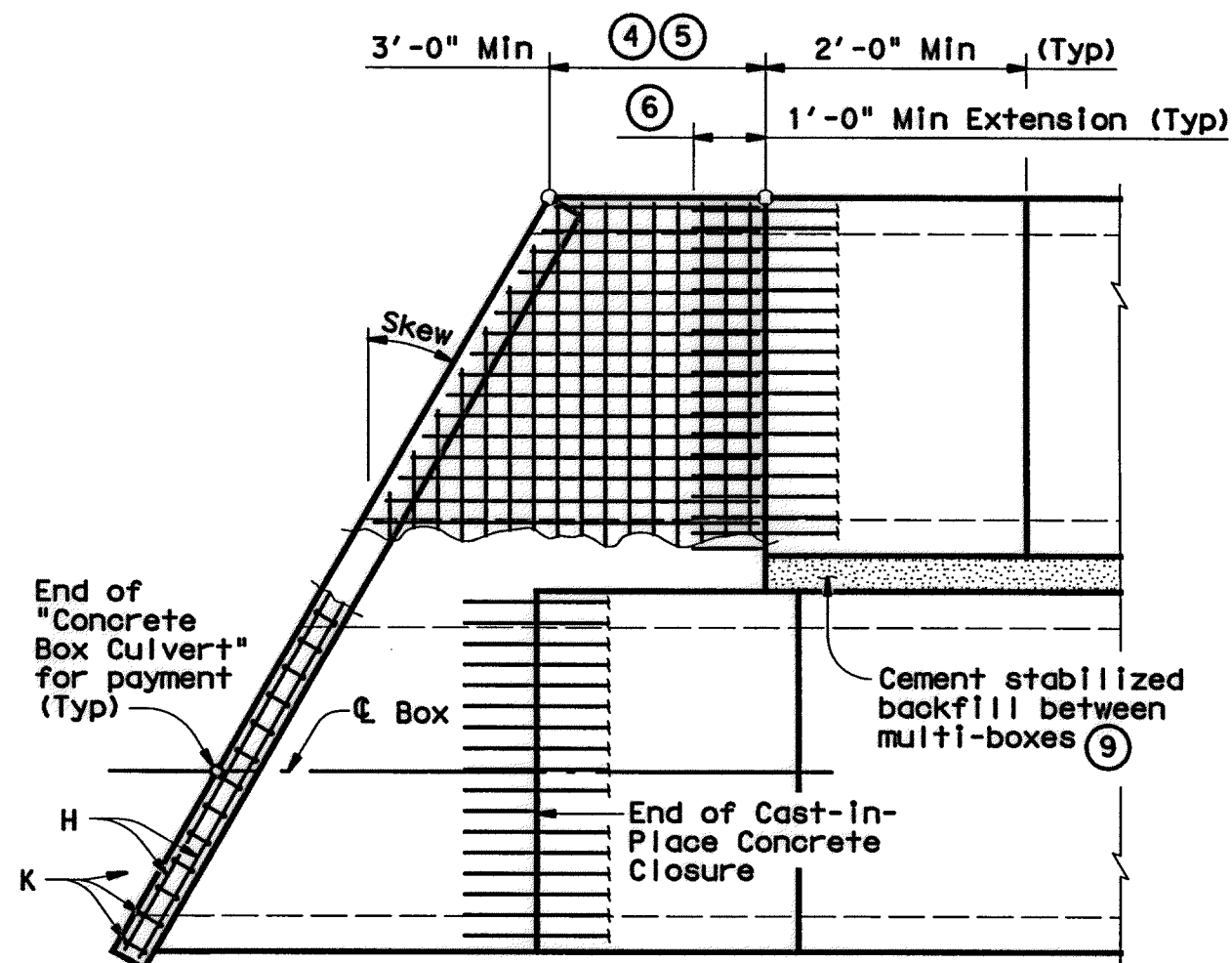
BARS K ~ #4  
(Spa = 1'-0" Max)  
(Length = 4'-3")



**ANGLE DETAIL**



**SECTION A-A**



**PLAN OF SKEWED ENDS**

(Showing multi-box placement)

- 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail or curbs taller than 1'-0", refer to EGD standard. For structures with T6 traffic rail, other than T6, refer to RAC standard.
- For curbs less than 1'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.
- Curb, Wingwall or Safety End Treatment reinforcing shall extend into concrete closure. Any reinforcing that does not fit into the closure shall be bent or trimmed as necessary.
- Cast-in-place concrete closure shall be 3'-0" min. Boxes shall be cast short or broken back in the field. All reinforcing in the closure shall be the same size and spacing as in the precast box section. Except where shown otherwise, the cast-in-place closure shall be flush with the inside and outside faces of the precast box section.
- For multiple unit placements the length of the closure for the interior walls may be adjusted as necessary. The length of the top slab, bottom slab, and exterior wall closure shall not be less than 3'-0". See Section B-B detail when interior walls are cast full length.
- Precast box reinforcing shall extend a minimum of 1'-0" into concrete closure (Typ).
- Bands of reinforcing matching the inside and outside face reinforcing shall be placed in the gaps of the top and bottom slabs. A band matching the outside face reinforcing of the wall shall be placed in the gaps of the walls (placed in the outside face only). The bands shall be tack welded to the exposed reinforcing at each point of contact.
- For vehicle safety, the following requirements must be met:
  - For structures without bridge rail, curbs shall project no more than 3" above finished grade.
  - For structures with bridge rail, curbs shall be flush with finished grade.
  - Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- Cement Stabilized Backfill between boxes is considered part of the Box Culvert for payment.
- All curb concrete and reinforcing is considered part of the Box Culvert for payment.
- Any additional concrete and reinforcing required for the closures shall be considered as subsidiary to the Concrete Box Culvert.
- 1'-0" typical. 2'-0" when RAC standard is referred to elsewhere in the plans.
- For multiple unit placement with overlay, with 1 to 2 course surface treatment, or with the top slab as the final riding surface, provide wall closure as shown in DETAIL "A".
- This dimension may be increased with approval of the Engineer to allow the precast boxes to be tunneled or jacked in accordance with Item 476, "Jacking, Boring, or Tunneling Pipe or Box". No payment will be made for any additional material in the gap between adjacent boxes.

**GENERAL NOTES:**

Designed according to AASHTO LRFD Specifications.  
All closure concrete shall be Class "C" with a minimum compressive strength of 3600 psi and shall be placed according to the Item, "Concrete Structures".  
Any additional concrete required for the closures shall be considered as subsidiary to the Concrete Box Culvert.  
Refer to the Single Box Culverts Precast standard for details not shown.  
The bottom edge of the top slab closure shall be chamfered 3 inches at the entrance.

HL93 LOADING

Texas Department of Transportation  
Bridge Division Standard

**BOX CULVERTS  
PRECAST  
MISCELLANEOUS DETAILS**

SCP-MD

FILE: scpmdstd.dgn	DN: GAF	CK: LMW	DW: BWH/TXDOT	CR: GAF
©TxDOT February 2010	CONT: SECT	JOB: HIGHWAY		
REVISIONS	DIST:	COUNTY:	SHEET NO. 53	

9-12-14

STATE OF TEXAS  
BRIAN R. WHITNEY, P.E.  
81591  
REGISTERED PROFESSIONAL ENGINEER

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY

LAN Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
PRECAST  
MISCELLANEOUS DETAILS

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SRG

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: 1"=2'	
HORZ: 1"=20'	
SHEET:	53 OF 226

pww\lradpw\_r\adec\_inet\project\130-10394-001\4-0-Product\on\4-01-Drawings\Standards\53-scpmstd.dgn 9/2/2014 3:01:38 PM MjGuthrie

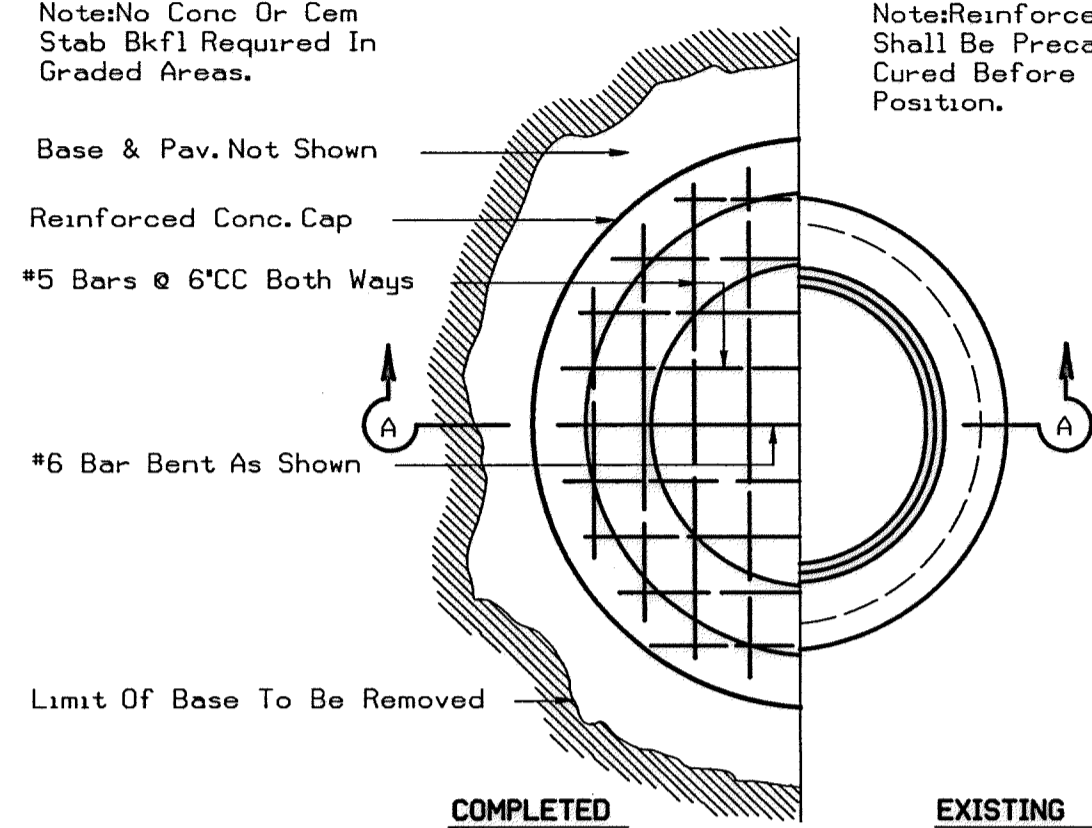
Notes: No Conc Or Cem Stab Bkfl Required In Graded Areas.

Base & Pav. Not Shown  
Reinforced Conc. Cap  
#5 Bars @ 6" C-C Both Ways

#6 Bar Bent As Shown

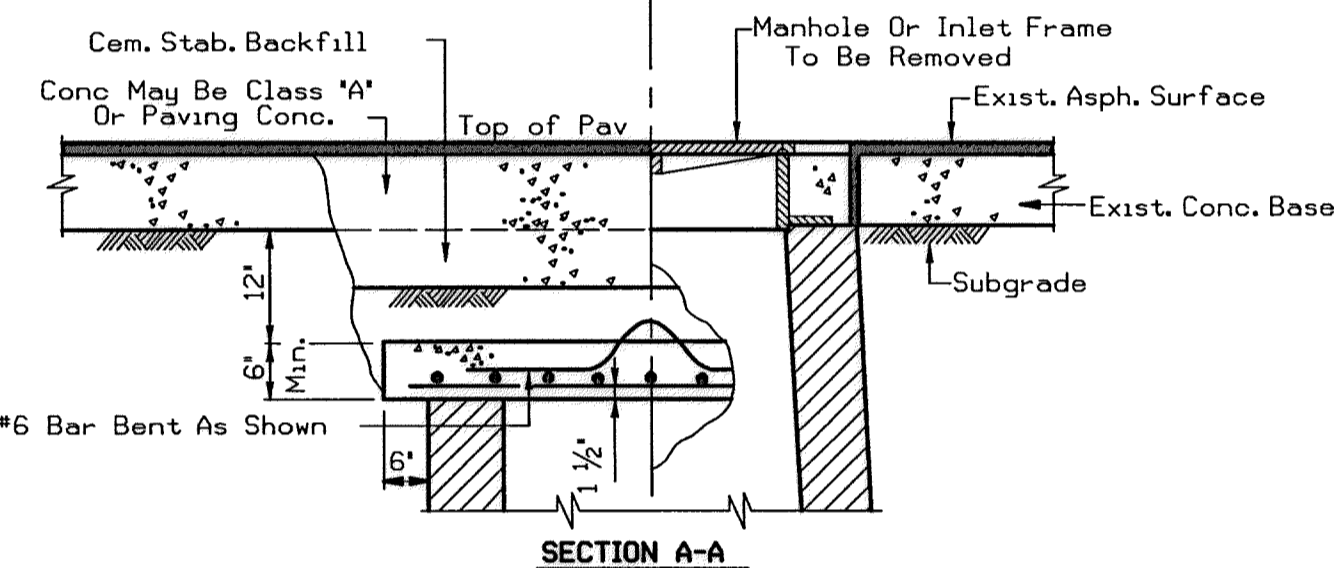
Limit Of Base To Be Removed

Notes: Reinforced Conc. Cap Shall Be Precast & Properly Cured Before Placing in Position.

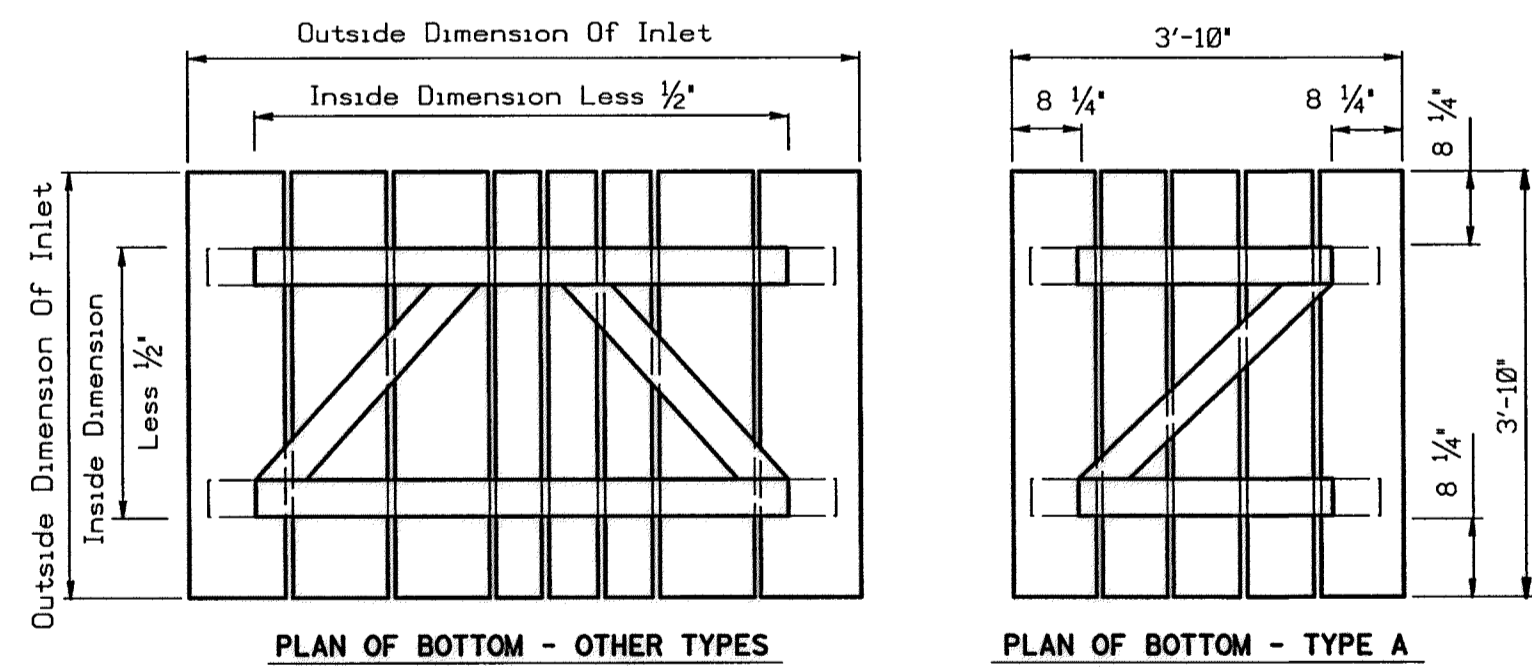


COMPLETED

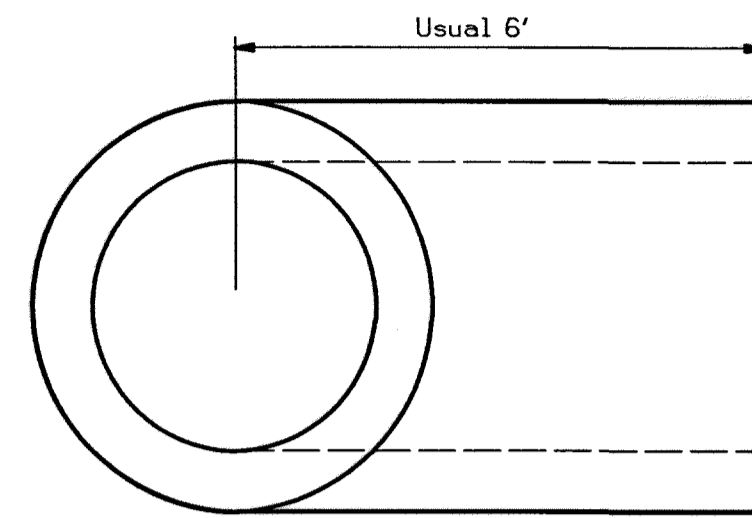
EXISTING



DETAIL SHOWING METHOD OF CAPPING ABANDONED MANHOLES OR INLETS (GRADED OR PAVED AREAS)

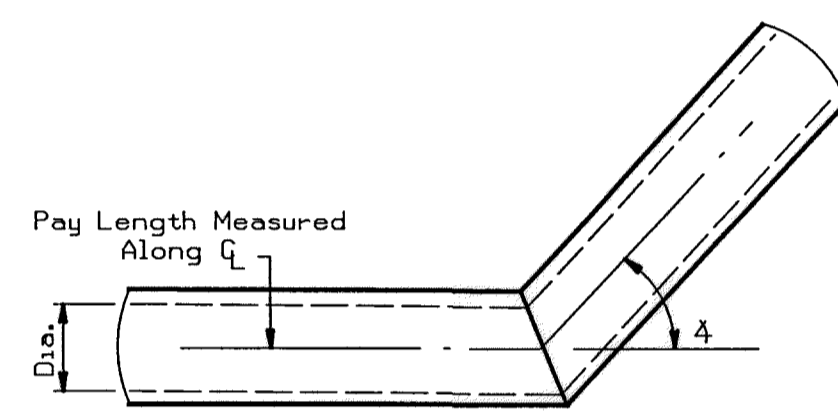


TEMPORARY COVERS FOR ALL TYPES OF INLETS



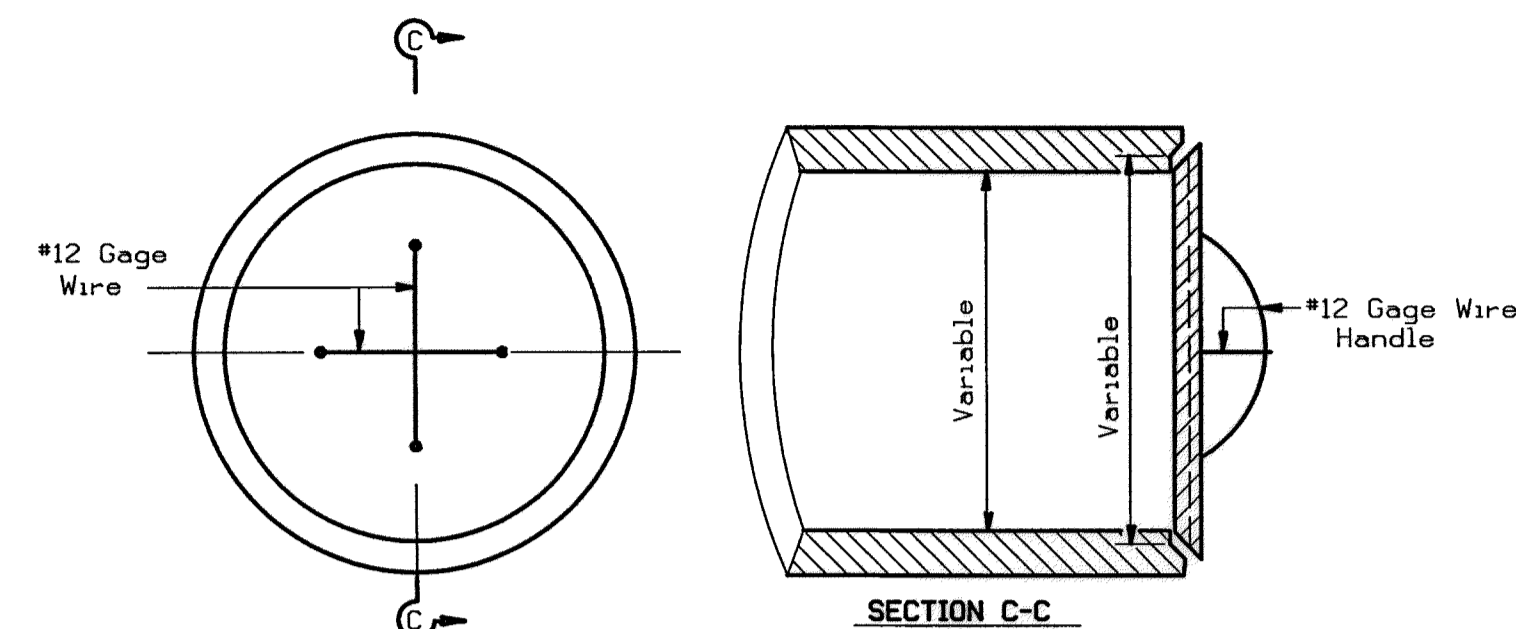
Notes: Jointing Material Shall Conform To Requirements Of Item 'Reinforced Concrete Pipe.' Material For Tees Shall Conform To Requirements Of Item 'Reinforced Concrete Pipe.' Payment For Tee To Be In Accordance With Item 'Reinforced Concrete Pipe.'

PRECAST STORM SEWER TEE



BENDING DETAIL

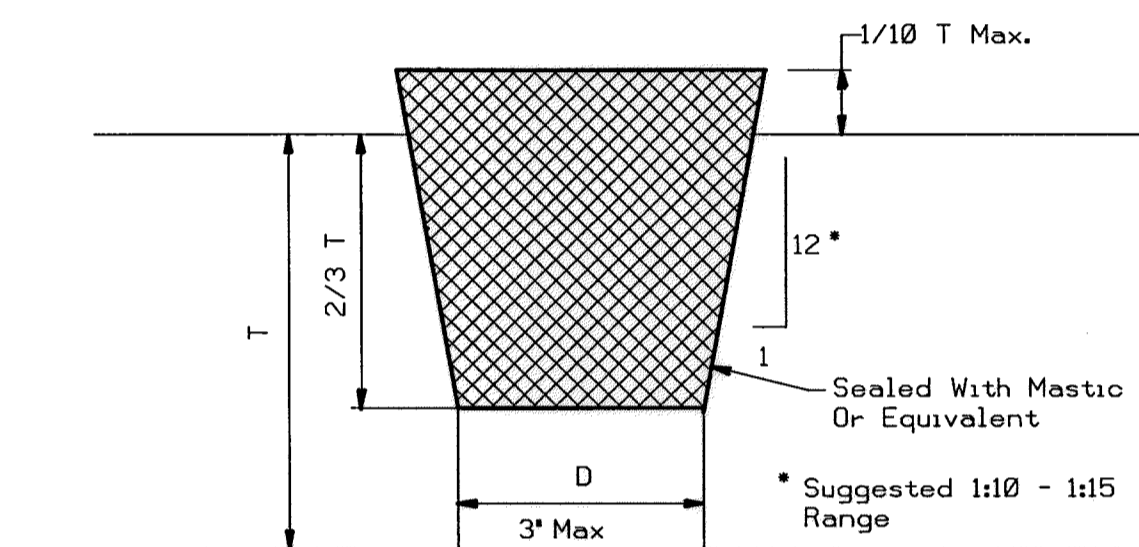
Notes: Bending Of Proposed Pipe Sewer Or RCP In A Vertical & /Or Horizontal Plane Shall Be Accomplished By The Use Of A 'Pipe Collar' Or A 'Precast Elbow', As Approved By The Engineer. Price Of 'Pipe Collar' Or 'Precast Elbow' Shall Be Subsidiary To The Unit Prices Bid For Item Reinforced Concrete Pipe. Along Pay Length Measurement To Be Along Horizontal C & Horizontal Plane Of Pipes.



Notes: The Price Of Plug Shall Be Subsidiary To The Unit Bid Price For Pipe Sewer Or RCP. Mortar Joints To Be Used As Directed By The Engineer. Removal Of The Existing Plugs For Storm Sewer Or RCP Conns. Shall Be Considered Incidental To Item 'Excavation And Backfill For Structures.'

Concrete Plug For End Of Pipe Culvert Or Sewer

CONCRETE PLUG FOR PIPE

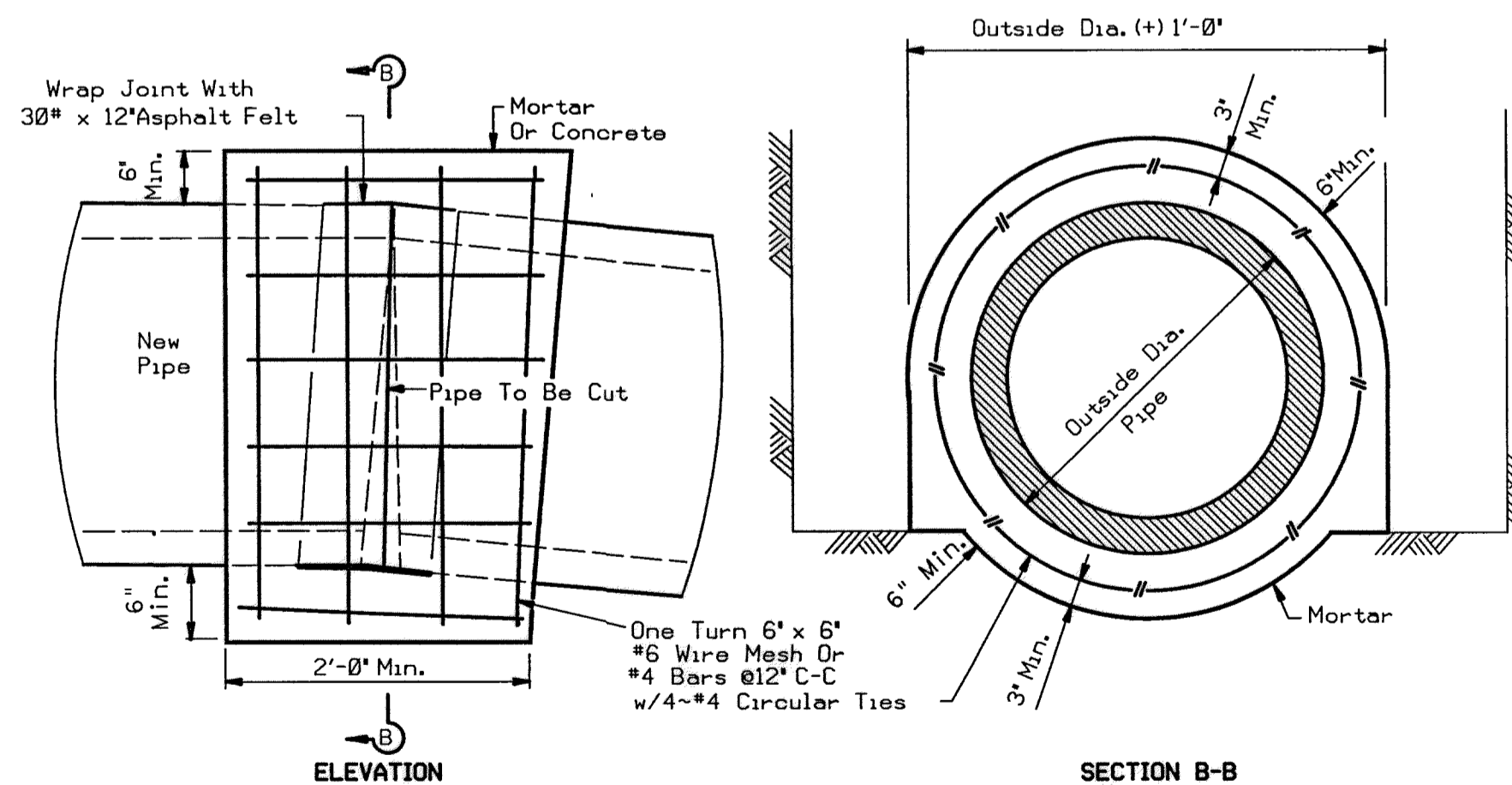


T = Wall Thickness On Top Of Box Or Pipe  
D = Diameter Of Lifting Hole

Minimum Length Of Plug Is 2/3 T +/-  
Minimum Diameter At Bottom Of Plug = D - 1/8"  
Maximum 1/10 T Of Plug Not Seated In Lifting Hole

Note: The Plug Shall Be Cast With The Same Taper As The Lifting Hole.

DETAIL OF PLUG FOR LIFTING HOLES IN RCB AND RCP



PIPE COLLAR DETAIL

For Horizontal Or Vertical Placement

d = Diameter  
R = Radius

Texas Department of Transportation  
Houston District (Bridge)

MISCELLANEOUS SEWER DETAILS

MSD

FILE#	STD011.DGN	DW: TXDOT	CR: TXDOT	DW: TXDOT	CR:
© TXDOT	Mar 2004	DISTRICT	FED REG	PROJECT NO.	SHEET
REVISIONS	HOUS	6			53
	COUNTY		CONTROL	SECT	JOB
					HIGHWAY

9-12-14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY

Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3

MISCELLANEOUS SEWER DETAILS

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SNQ

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: 1" = 2'	
HORZ: 1" = 20'	
SHEET:	
54 OF 226	

STD011.DGN

McCutcher

3:02:16 PM

9/3/2014

pm \\\ladpw. laddco. lntr\project\150-10384-001\4-0-Product\ton\4-01-Drawings\Standard\53-std011.dgn



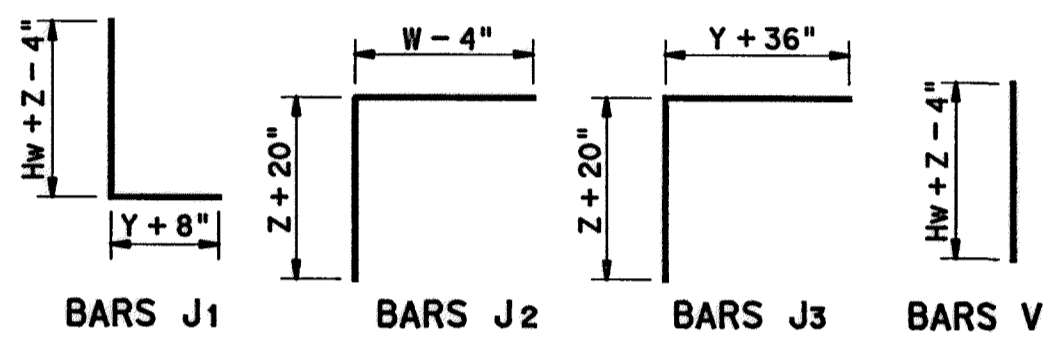
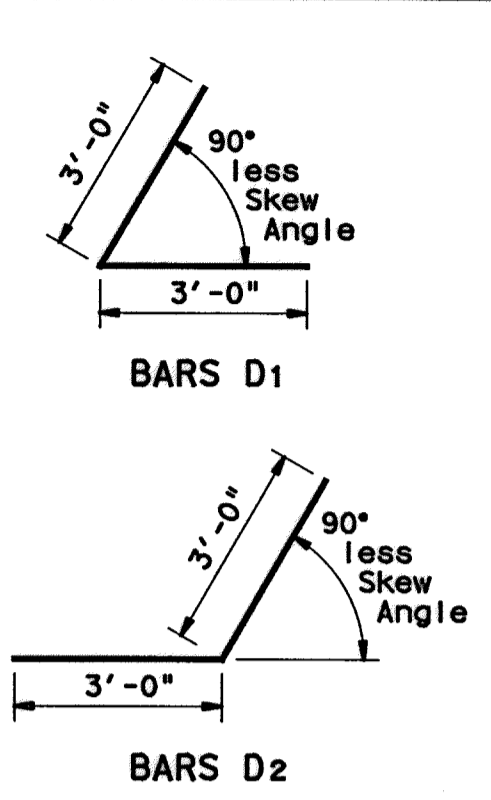
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the author or publisher for the conversion of this standard to other formats or for inaccuracies or omissions in any reproduction.

DATE: FILE:

TABLE OF DIMENSIONS & REINFORCING STEEL (Wings for One Structure End)												
Maximum Wingwall Height Hw	Dimensions				Variable Reinforcing				Estimated Quantities per ft of wing (2-Wings)	Estimated Quantities per ft of Toewall (1-Toewall)		
	W	X	Y	Z	Bars J1	Bars J2	Reinf (Lb/Ft)	Conc (CY/Ft)				
2'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	48.64	0.406	6.85	0.071
2'-9"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.31	0.424	6.85	0.071
3'-0"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.98	0.444	6.85	0.071
3'-3"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.32	0.462	6.85	0.071
3'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.98	0.480	6.85	0.071
4'-0"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	55.77	0.532	6.85	0.071
4'-6"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	59.77	0.568	6.85	0.071
5'-0"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	63.45	0.632	6.96	0.075
5'-6"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	67.46	0.668	6.96	0.075
6'-0"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	80.67	0.730	7.07	0.078
6'-6"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	85.05	0.768	7.07	0.078
7'-0"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	92.15	0.864	8.07	0.093
7'-6"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	96.54	0.902	8.07	0.093
8'-0"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	139.04	0.962	8.13	0.095
8'-6"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	144.47	1.000	8.13	0.095
9'-6"	6'-0"	2'-10"	2'-2"	9"	#5	6"	#5	6"	156.93	1.136	8.41	0.110
10'-6"	6'-5"	3'-0"	2'-5"	9"	#6	6"	#5	6"	196.27	1.234	8.57	0.117
11'-6"	7'-2"	3'-6"	2'-8"	11"	#6	6"	#6	6"	230.13	1.438	9.52	0.140
12'-6"	7'-8"	3'-9"	2'-11"	1'-0"	#7	6"	#6	6"	283.41	1.592	9.74	0.157
13'-6"	8'-2"	4'-0"	3'-2"	1'-2"	#8	6"	#6	6"	348.72	1.804	10.02	0.186
14'-6"	8'-10"	4'-5"	3'-5"	1'-4"	#9	6"	#6	6"	432.94	2.046	10.30	0.218
15'-6"	9'-6"	4'-10"	3'-8"	1'-6"	#9	6"	#7	6"	489.52	2.302	11.24	0.253
16'-0"	9'-11"	5'-0"	3'-11"	1'-7"	#9	6"	#7	6"	505.72	2.448	11.47	0.279

TABLE OF WINGWALL REINFORCING (2-Wings)			
Bar Size	No.	Spa	
D1	#6	~	1'-0"
D2	#6	~	1'-0"
E1	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	~	8"
M1	#4	4	~
P	#4	~	1'-0"
V	#4	~	1'-0"

TABLE OF TOEWALL REINFORCING			
Bar Size	No.	Spa	
J3	#4	~	1'-0"
M2	#4	2	~
E2	#4	~	1'-0"



**WING DIMENSION CALCULATIONS:**

Formulas: (All values are in Feet)

Hw = H + T + C  
 Lw = (Hw) (SL) ÷ Cosine φ for Ty PW-1  
 = (Hw - 1') (SL) ÷ Cosine φ for Ty PW-2 and Hw ≥ 4'  
 = (Hw - 0.5') (SL) ÷ Cosine φ for Ty PW-2 and Hw < 4'

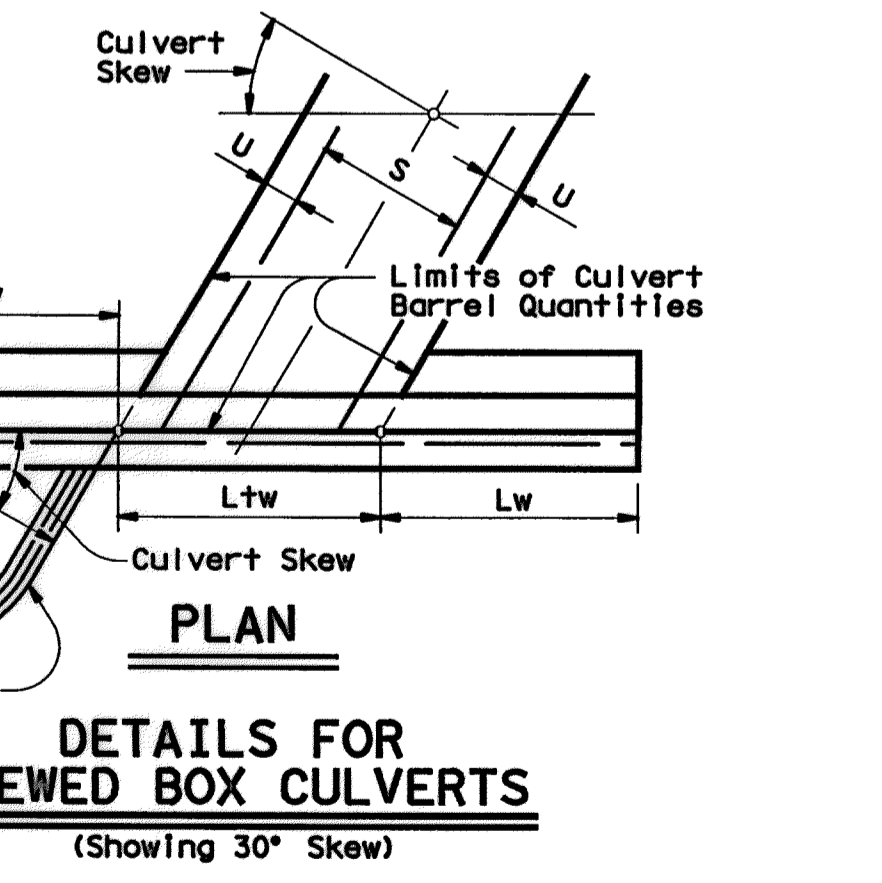
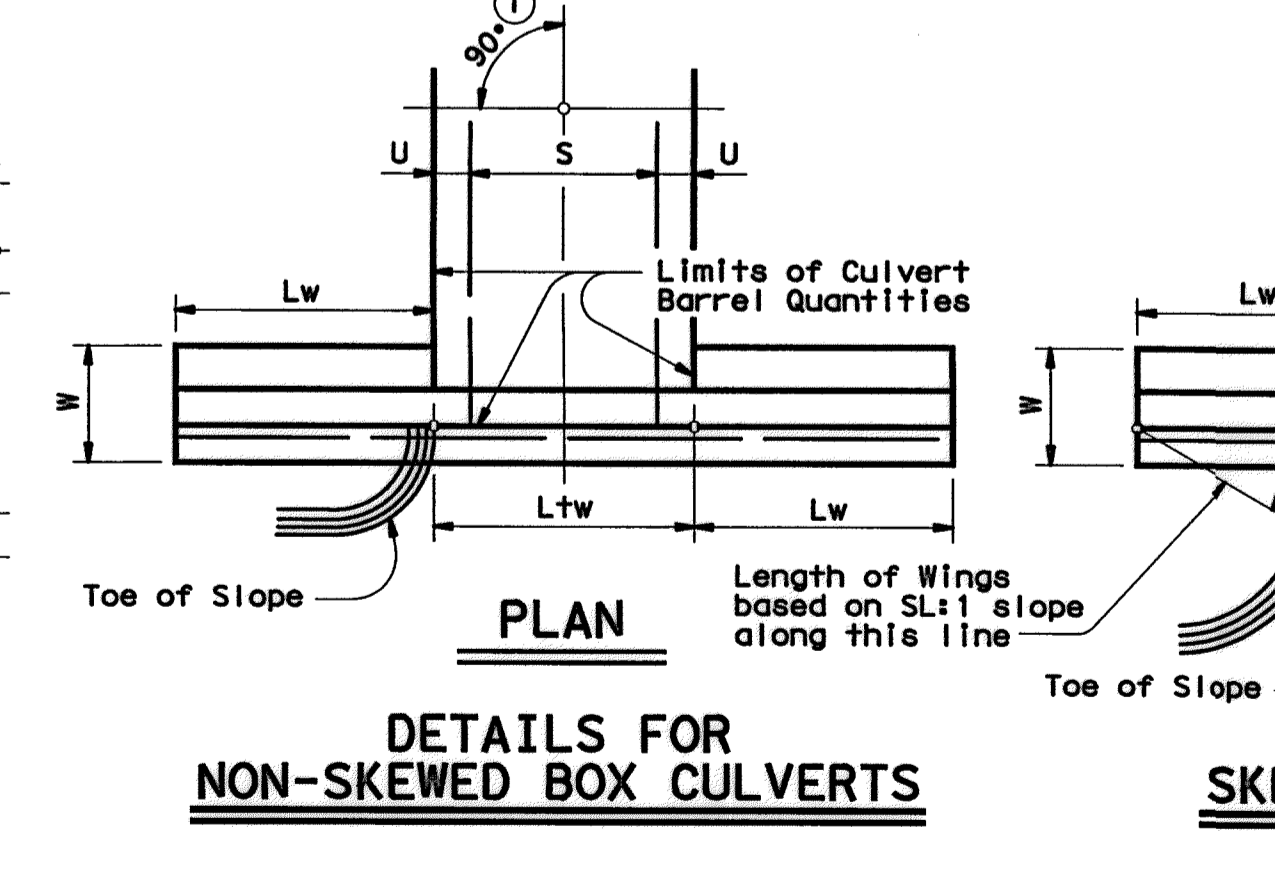
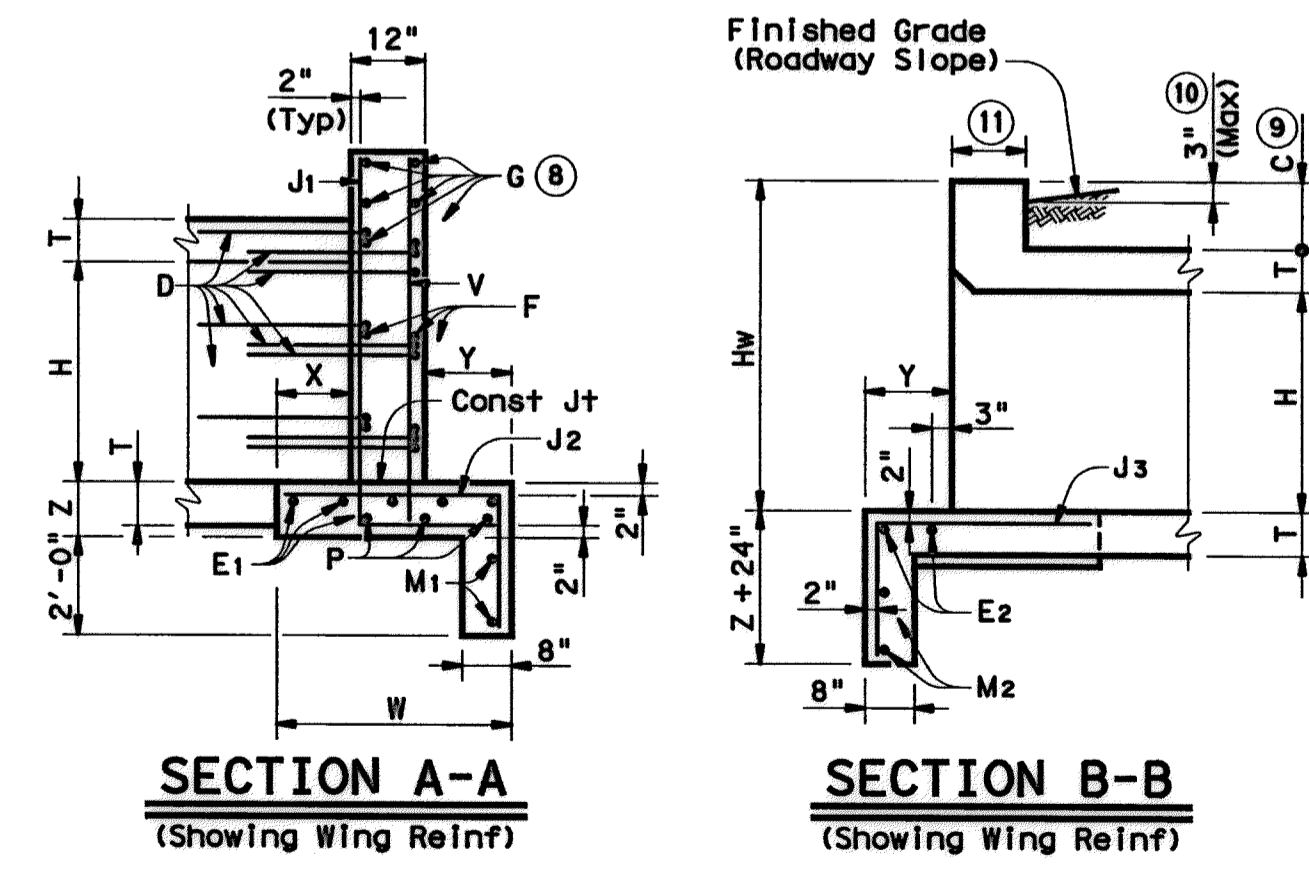
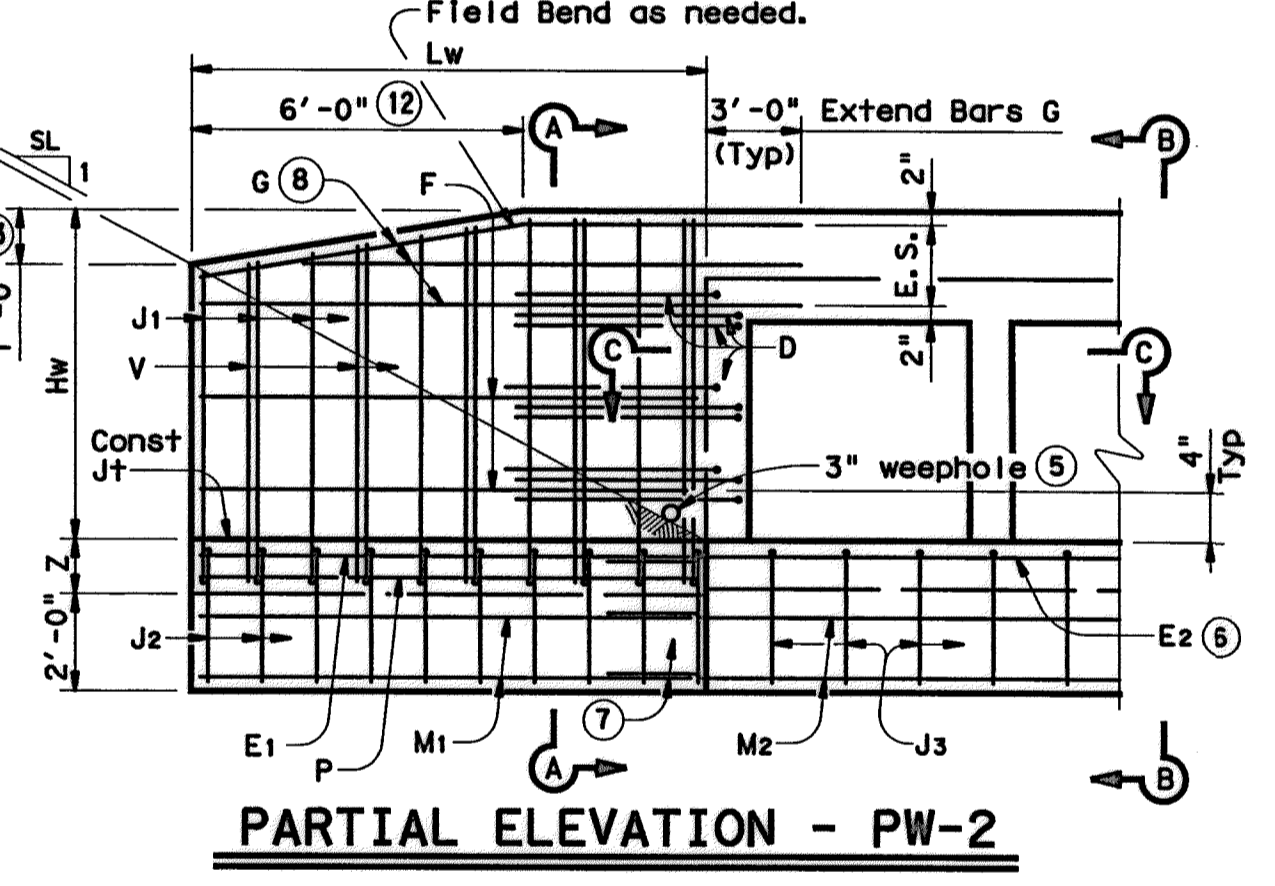
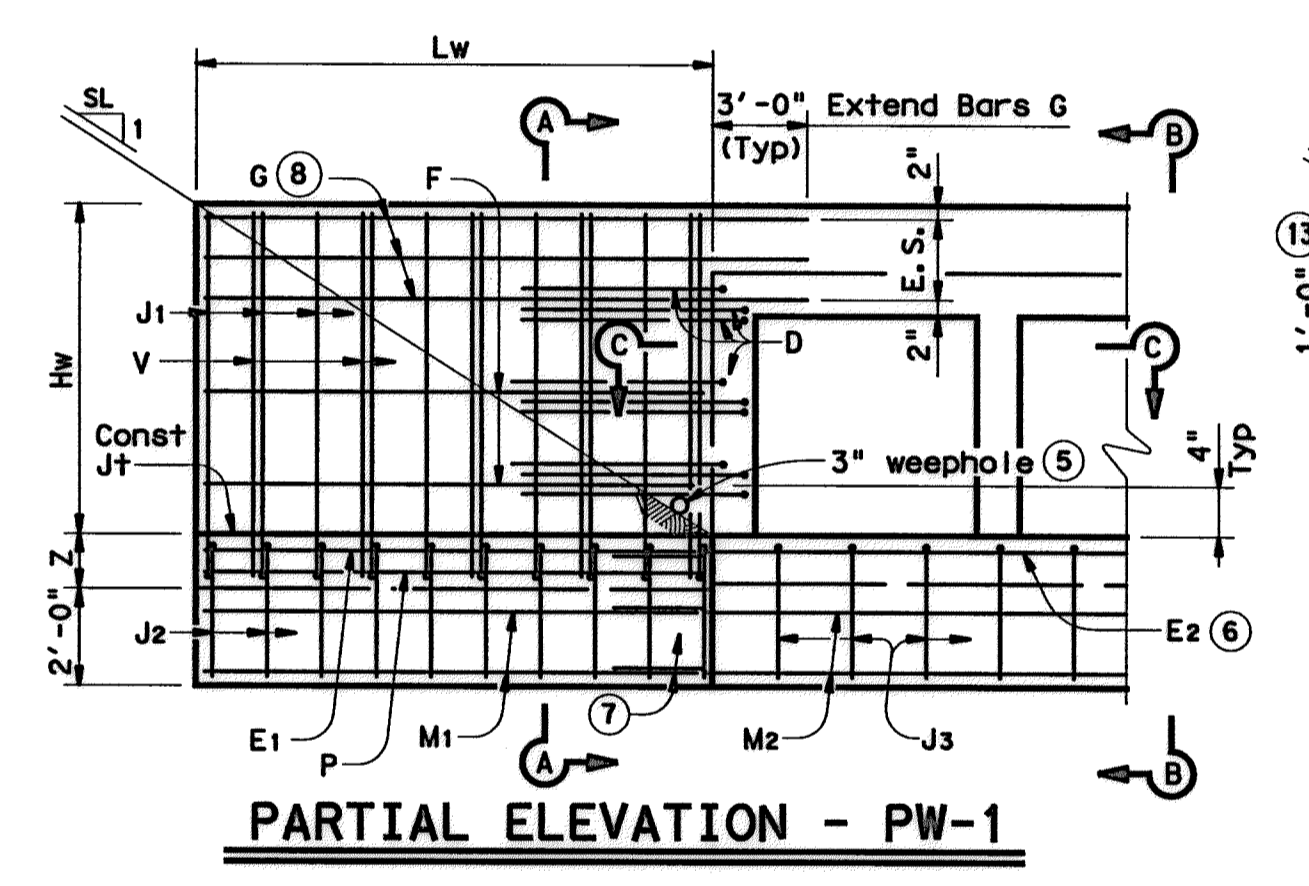
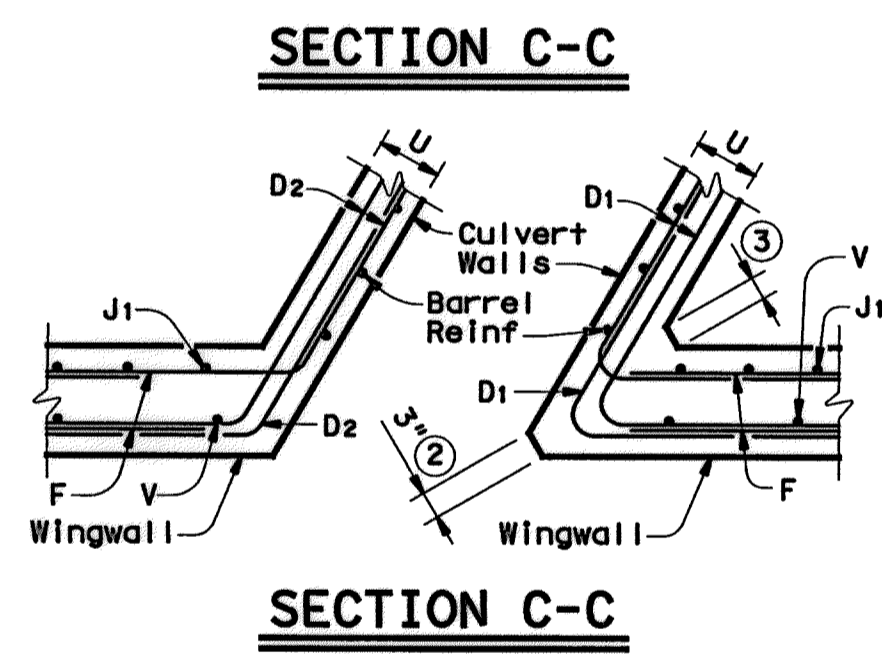
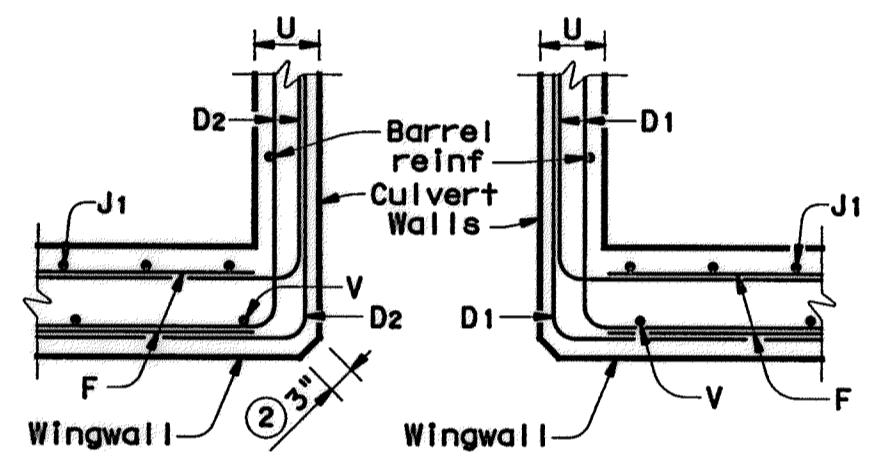
For Cast-in-place culverts:  
 Ltw = [(N) (S) + (N + 1) (U)] ÷ Cosine φ

For Precast culverts:  
 Ltw = [(N) (2 U + S) + (N - 1) (0.5')] ÷ Cosine φ

Total Wingwall Area (Two Wings ~ SF)  
 = (2) (Hw) (Lw) for Ty PW-1  
 = (2) (Hw) (Lw) - 6 SF for Ty PW-2 and Hw ≥ 4'  
 = (2) (Hw) (Lw) - 1.5 SF for Ty PW-2 and Hw < 4'

Hw = Height of Wingwall  
 Lw = Length of Wingwall  
 Ltw = Culvert Toewall Length  
 N = Number of Culvert Spans  
 SL:1 = Channel Slope ratio. (Horizontal: 1 Vertical, Usual value is 2:1)  
 φ = Culvert Skew

See applicable box culvert standard for S, H, T and U values.



- Skew Angle = 0°
- At discharge end, chamfer may be 3/4".
- For 15° Skew ~ 1"  
For 30° Skew ~ 2"  
For 45° Skew ~ 3"
- Quantities shown are for two Type PW-1 wings. Adjust concrete volume for Type PW-2 wings. To determine estimated quantities for two wings, multiply the tabulated values by Lw. Quantities shown do not include weight of Bars D.
- Provide weepholes for Hw = 5'-0" and greater. Fill around weepholes with coarse gravel.
- Extend Bars E2 1'-6" minimum into the wingwall footing.
- Lap Bars M1 1'-6" minimum with Bars M2.
- Bars G equally spaced at 8" maximum, place as shown. Provide at least two pair Bars G per wing.
- 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail or curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with traffic rail, other than T6, refer to RAC standard.
- For vehicle safety, the following requirements must be met:  
 - For structures without bridge rail, curbs cannot project more than 3" above finished grade.  
 - For structures with bridge rail, build curbs flush with finished grade. Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- 1'-0" typical. 2'-0" typical when RAC standard is referenced elsewhere in the plans.
- 3'-0" for Hw < 4'.
- 6" for Hw < 4'.

**GENERAL NOTES:**  
 Designed in accordance with AASHTO LRFD Bridge Design Specifications.  
 Provide Class "C" Concrete (f'c = 3,600 psi Min) and Grade 60 reinforcing steel.  
 Provide 1/4" Min clear cover to reinforcing steel. Depth of toewalls for wingwalls and culverts may be reduced or eliminated when founded on solid rock, when directed by the Engineer.  
 See ECS sheet for wingwall type and additional dimensions and information.  
 The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for the Contractor's information only.

**DESIGNER NOTES:**  
 Type PW-1 can be used for all applications and must be used if railing is to be mounted to the wingwall. Type PW-2 can only be used for applications without a railing mounted to the wingwall.

Texas Department of Transportation		Bridge Division Standard	
<b>CONCRETE WINGWALLS WITH PARALLEL WINGS FOR BOX CULVERTS TYPES PW-1 AND PW-2</b>			
<b>PW</b>			
FILE: pw01001.dgn	DN: GAF	CK: CAT	DW: TADOT
©TxDOT February 2010	CONT	SECT	JOB
REVISIONS			
11-10: Reinforcing Quantities.	DIST		
9-12: PW-1 & PW-2.	COUNTY	SHEET NO.	
		55	

7-12-14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEG A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3

**CONCRETE WINGWALLS**

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO. : FACILITY

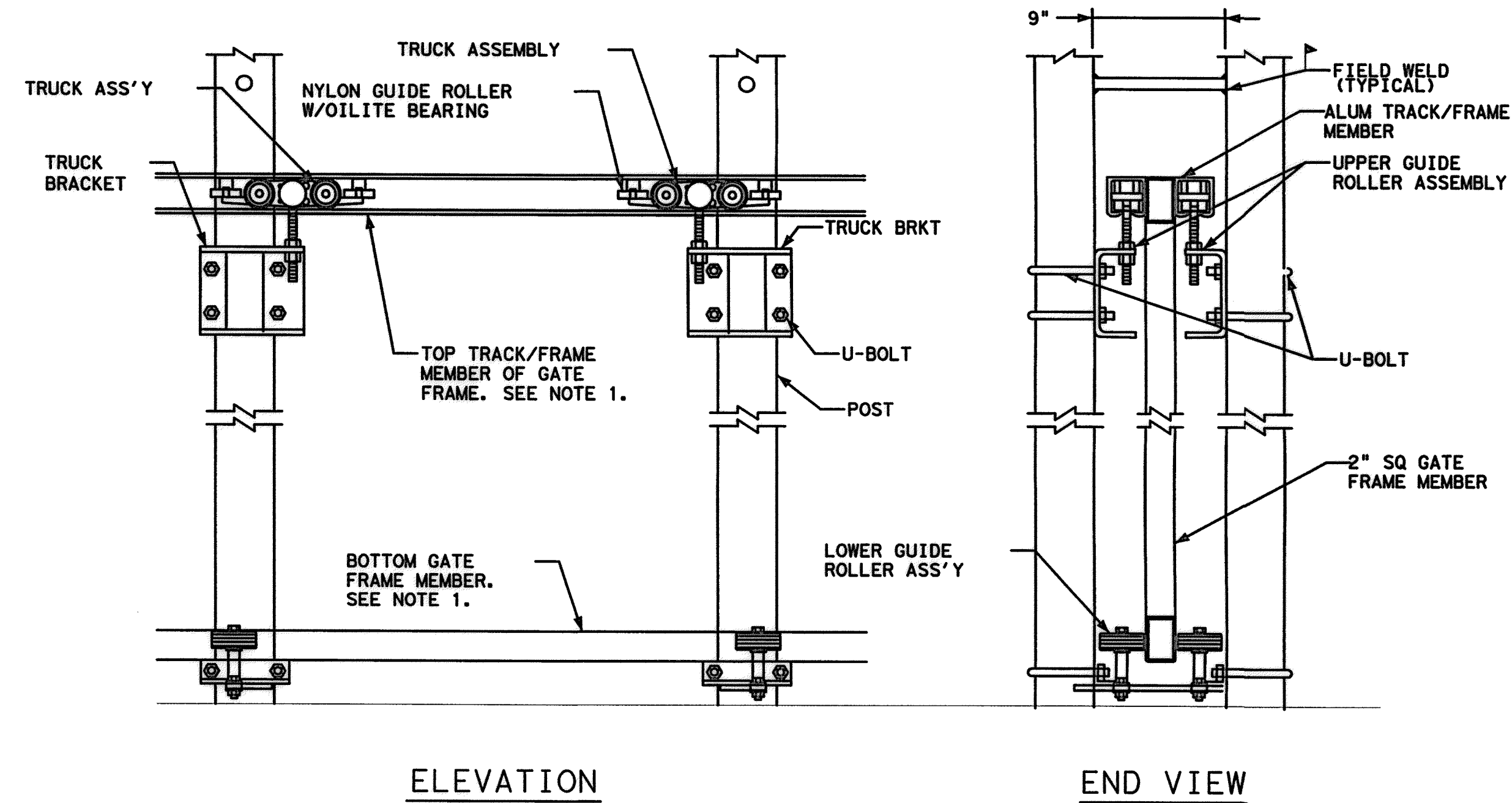
DRAWING SCALE: CITY DWG NO.

VERT: 1"=2'  
HORIZ: 1"=20'

SHEET: 56 OF 226

APP: REVISIONS: No. DATE: 9/3/2014 3:08:57 PM MUGurth-1e pw\1\adpw\_1\adco\_1\nt1\project\w\ee\Documents\Fr-o\Jects\130-10384-001\4-0-Product\on\4-0-1-0-Drawings\Standards\TxDOT\56-pw01001.dgn

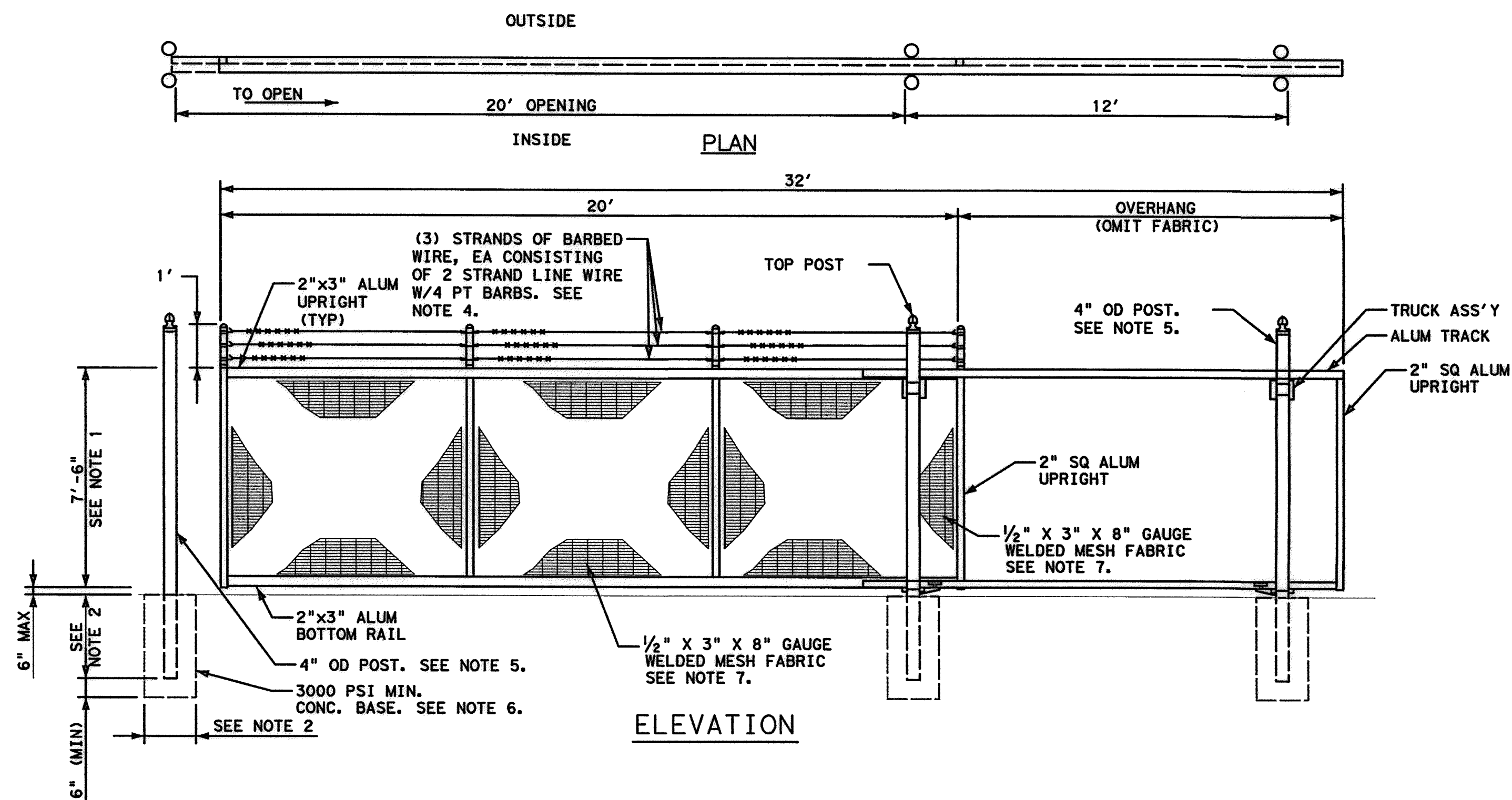




**NOTES:**

1. TOP AND BOTTOM GATE FRAME MEMBERS SHALL BE 2"x3" HOT-DIPPED GALVANIZED AND CONFORM TO THE STRENGTH REQUIREMENTS OF ASTM A 53, GRADE A.

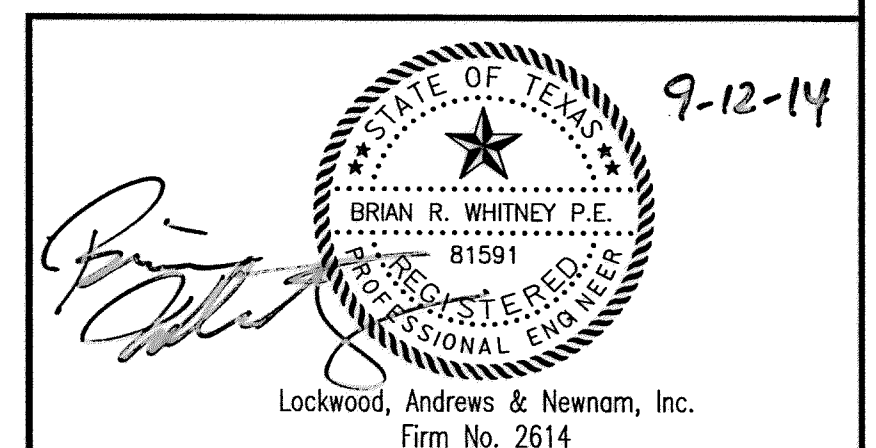
1 20' CANTILEVER GATE  
39 NTS



**NOTES:**

1. MAINTAIN SAME HEIGHT AS EXISTING FENCE. CONTRACTOR SHALL FIELD VERIFY.
2. FOOTING WIDTH TO BE (4)X POST WIDTH MIN. DEPTH TO BE 36" MIN.
3. GATE SHALL BE FOR MANUAL OPERATON.
4. BARB WIRE SHALL BE 12-1/2 GAUGE CLASS II, HOT DIPPED GALVANIZED ITEMS TO COMPLY WITH ASTM A-641 WITH TENSILE STRENGTH OF 83 KSI ZINC COATED AFTER WELDING IN ACCORDANCE WITH ASTM A-123, 1.2 oz ZINC/FT AS SPECIFIED.
5. ALL POSTS SHALL CONFORM TO STRENGTH REQUIREMENTS OF ASTM A-53, GRADE A, HOT DIPPED GALVANIZED.
6. FOUNDATION POST TO BE SET IN CONCRETE. MIX SHALL BE IN ACCORDANCE WITH ASTM C-94.
7. WELDED MESH FABRIC SHALL BE CONSTRUCTED BY COMPUTER RESISTANCE WELDING, HIGH-TENSILE CARBON STEEL LINE, WITH STAY WIRE TOGETHER. MESH SHALL BE NON-CLIMB AND CUT RESITANT.

2 20' CANTILEVER GATE  
39 NTS



MEMORIAL CITY REDEVELOPMENT AUTHORITY

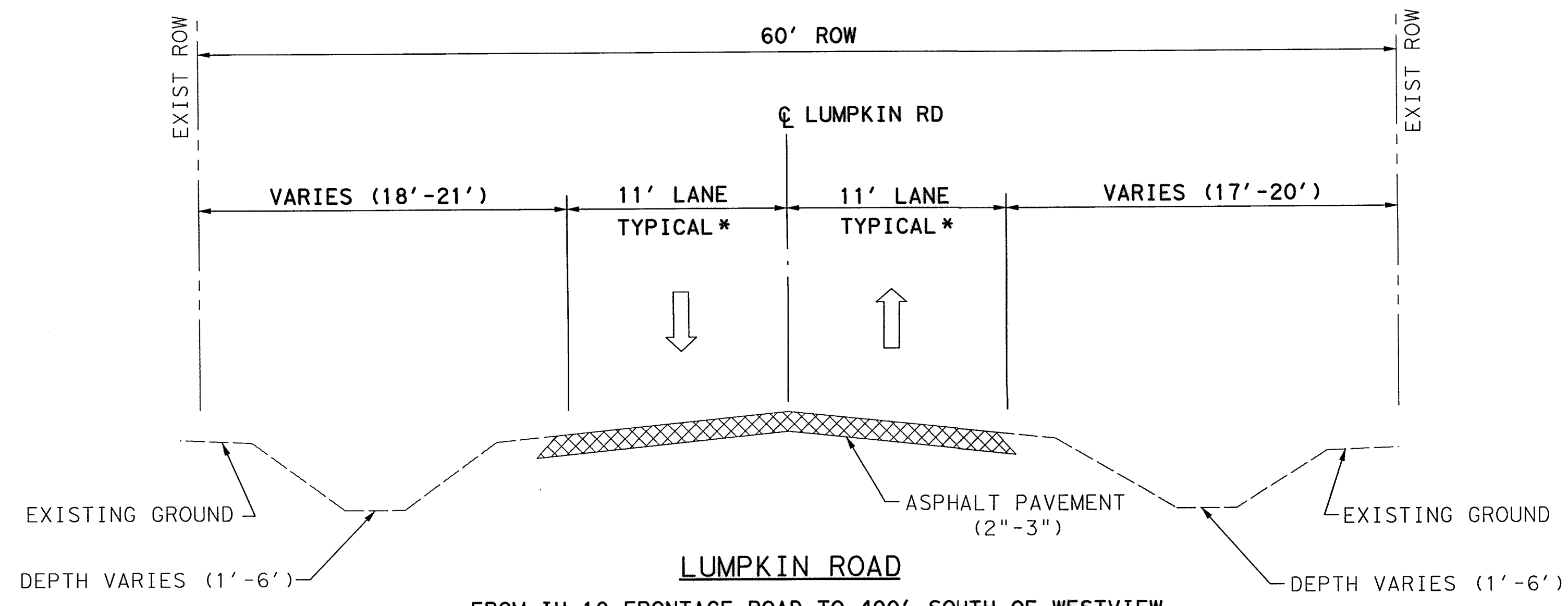
**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
GATE DETAILS

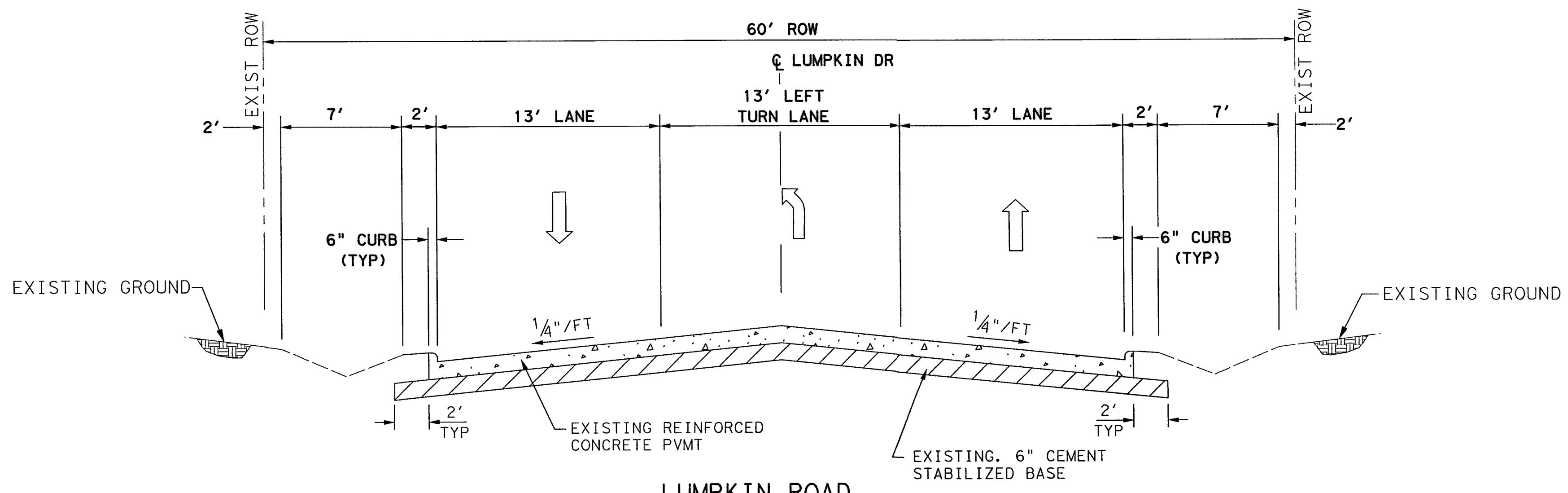
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

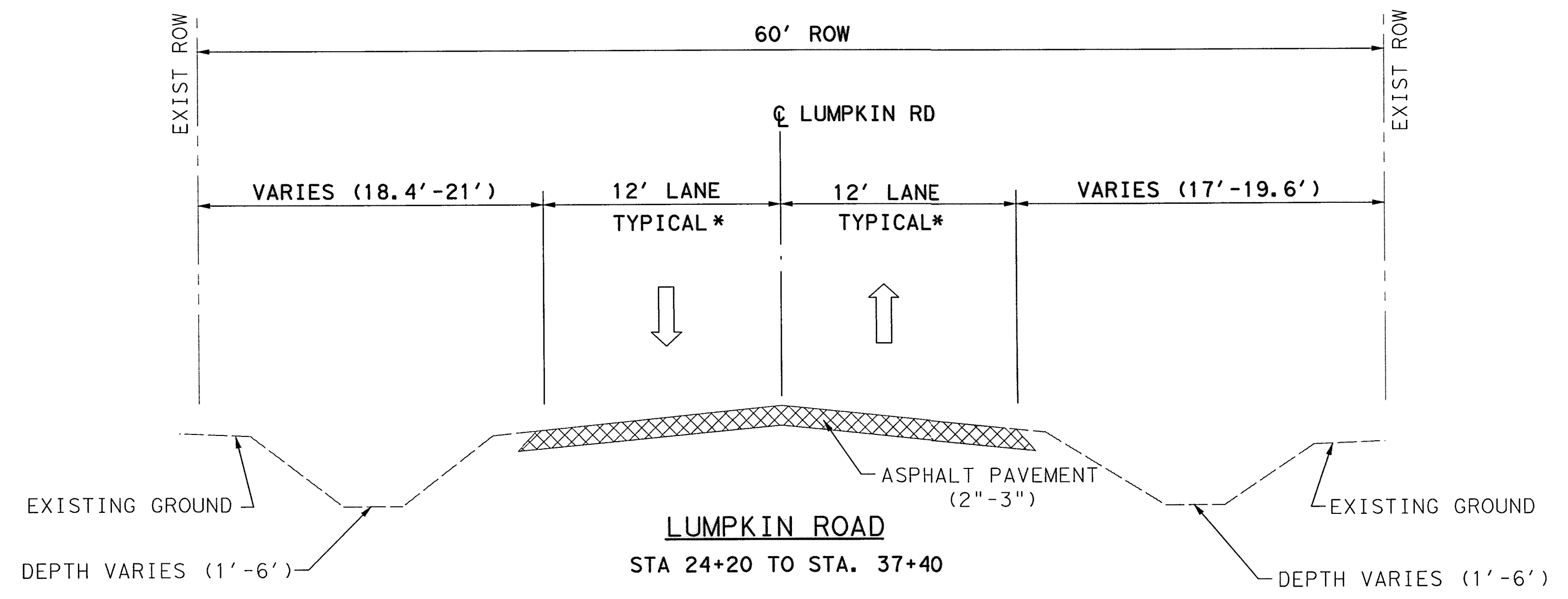
FILE NO.:	FACILITY
DRAWING SCALE: NTS	CITY DRG NO.
VERT: HORZ:	
SHEET: 57 OF 226	



**LUMPKIN ROAD**  
 FROM IH 10 FRONTAGE ROAD TO 400' SOUTH OF WESTVIEW  
 \*STA. 19+50 TO STA. 22+50 - PAVEMENT TRANSITIONS FROM 22' TO 39'



**LUMPKIN ROAD**  
 STA. 20+90 TO STA. 24+20 - 39' CONCRETE CURB AND GUTTER

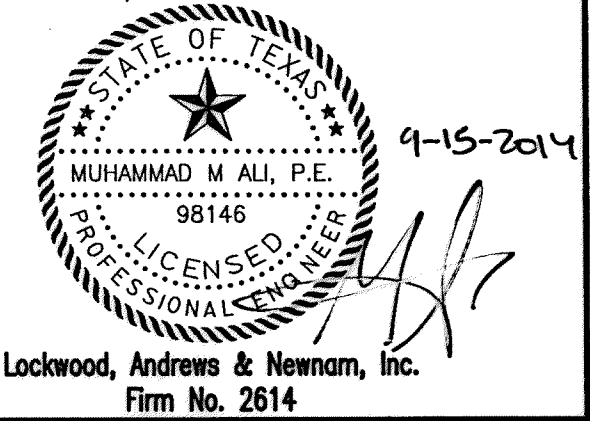


**LUMPKIN ROAD**  
 STA 24+20 TO STA. 37+40

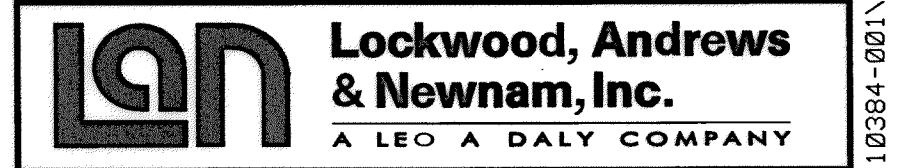
**LEGEND**

- EXIST ROW
- ➡ EXISTING TRAFFIC FLOW

**NOTE:**  
 1. NORTHBOUND & SOUTHBOUND LEFT TURN LANES EXIST AT THE INTERSECTION OF WESTVIEW ROAD.



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**



**LUMPKIN ROAD**  
 N-T17000-0012-3  
 EXISTING TYPICAL SECTIONS

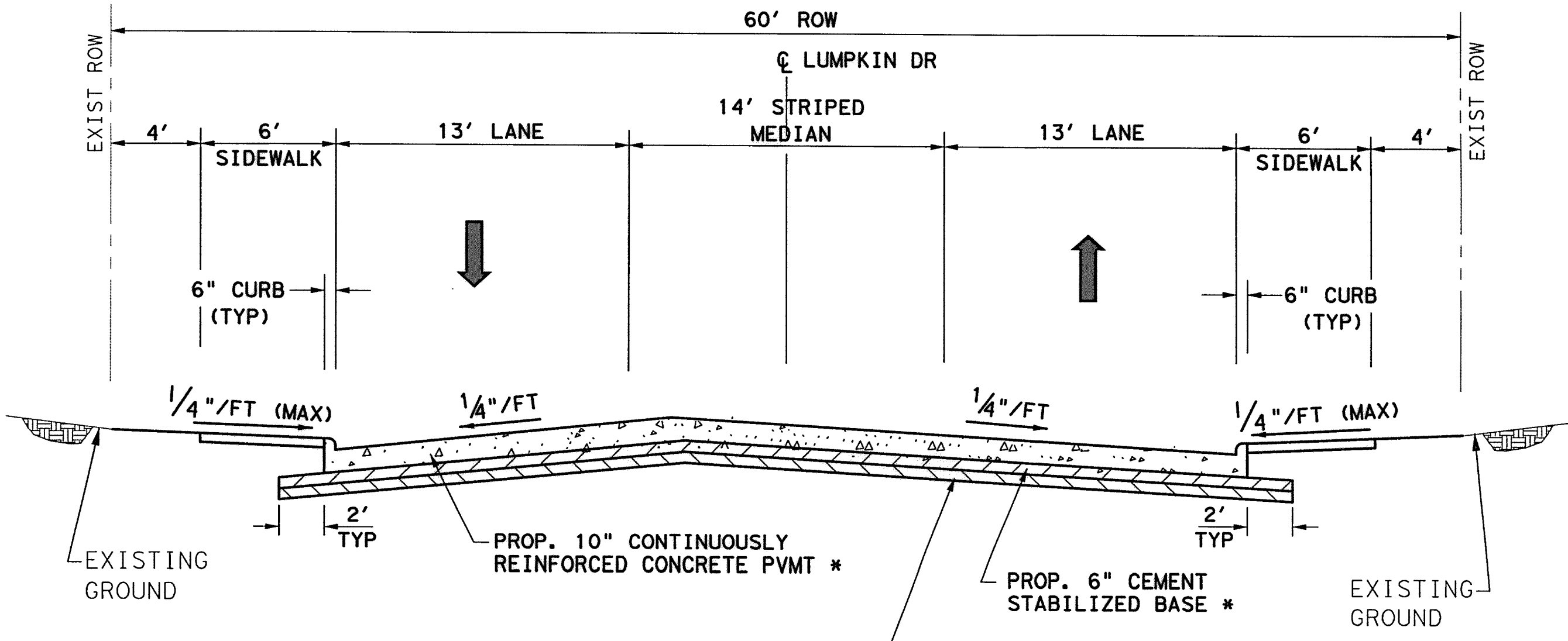
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
HORZ: 1"=5'		
SHEET:	58 OF 226	

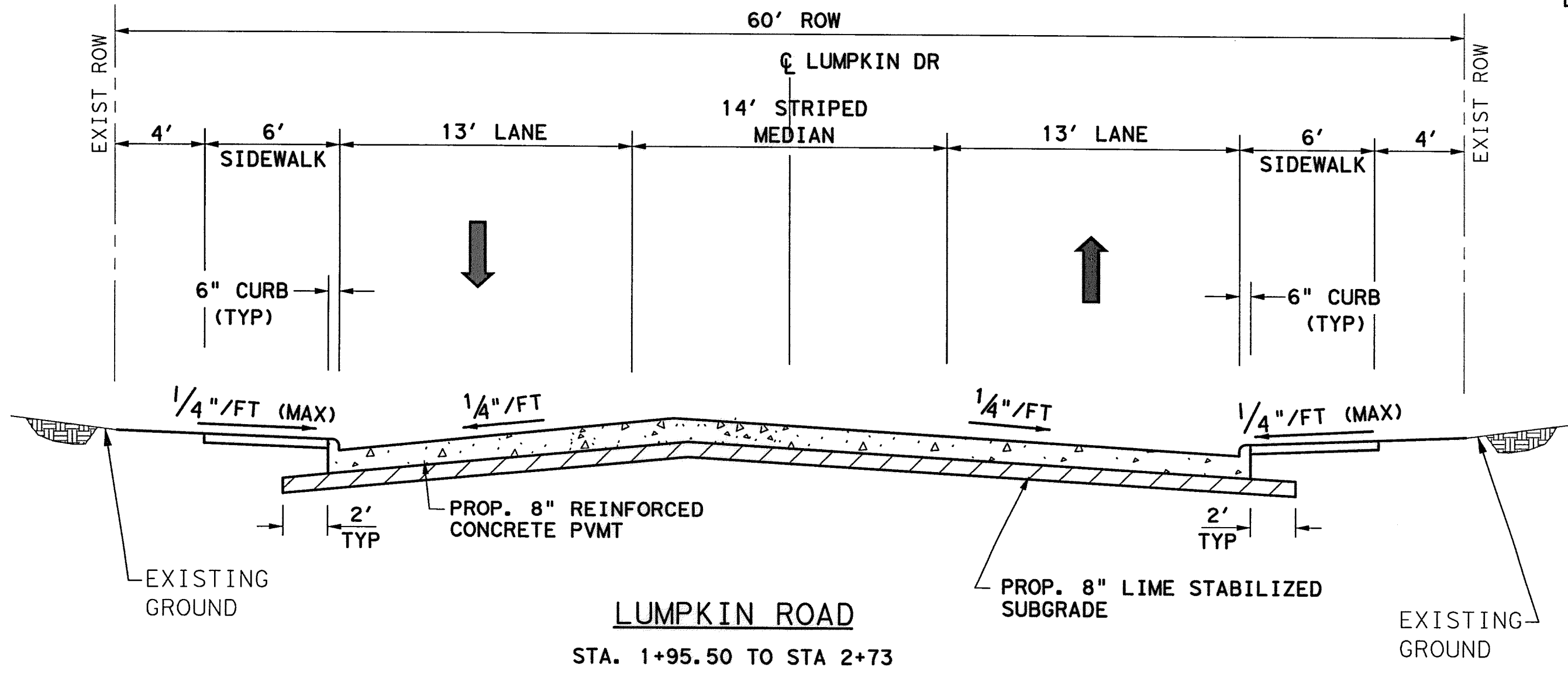
No. DATE REVISIONS APP. 11:10:39 AM 9/3/2014 Section-1 9/3/2014

APP.
REVISIONS
No.
DATE

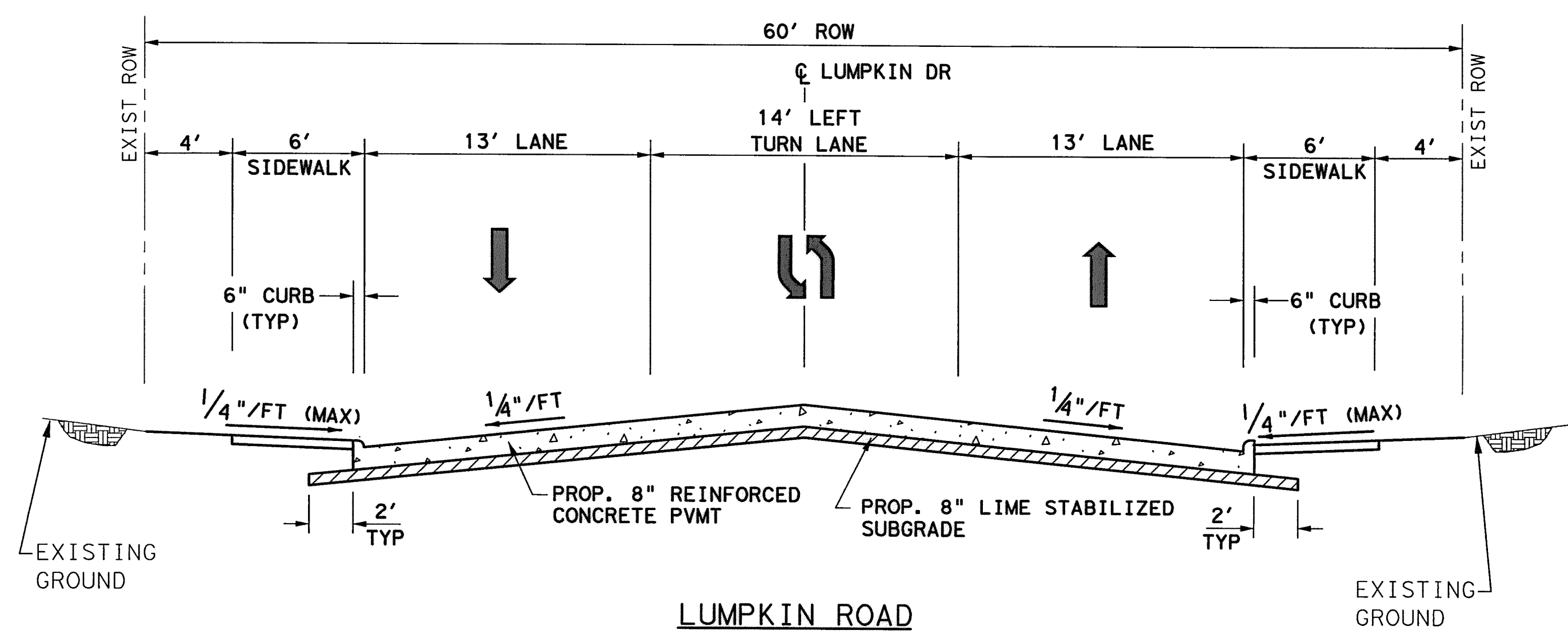
**LEGEND**  
 - - - EXISTING ROW  
 → PROPOSED TRAFFIC FLOW



**LUMPKIN ROAD**  
 STA. 1+51.86 TO STA. 1+95.50  
 \* MATCH TxDOT PAVEMENT

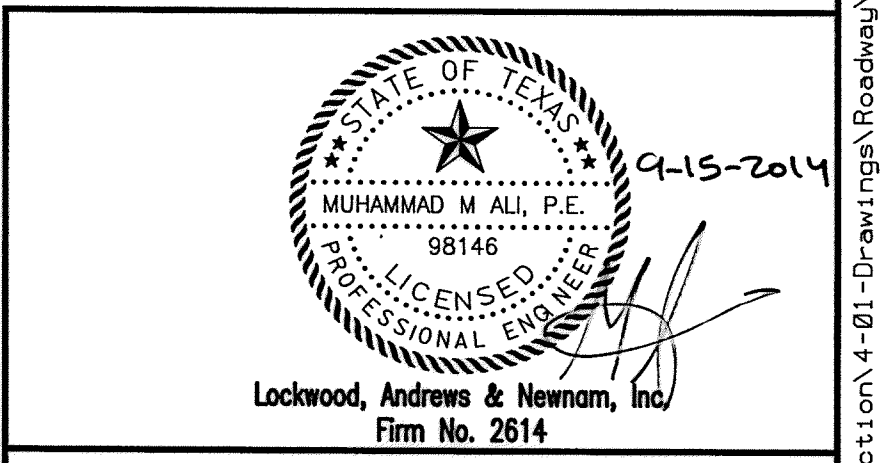


**LUMPKIN ROAD**  
 STA. 1+95.50 TO STA. 2+73

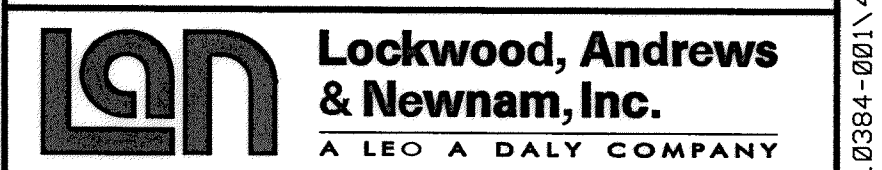


**LUMPKIN ROAD**  
 STA. 2+73 TO STA. 9+87,  
 STA. 13+58 TO STA. 16+78,  
 STA. 20+46 TO STA. 22+86,  
 STA. 24+15 TO STA. 34+78 (ALTERNATE BID)

- NOTE:**
- FOR STATION 17+00 TO 18+00 (FAULT ZONE LIMITS) SEE "PROPOSED TYPICAL SECTIONS SHEET 3 OF 3 FOR DETAILS.
  - NORTHBOUND & SOUTHBOUND LEFT TURN LANES EXIST AT THE INTERSECTION OF WESTVIEW ROAD.
  - REFER TO CITY OF HOUSTON STANDARD DETAIL "CONCRETE PAVEMENT DETAIL" (DWG NO. 02751-01) FOR REINFORCING STEEL BAR SIZES AND SPACINGS.



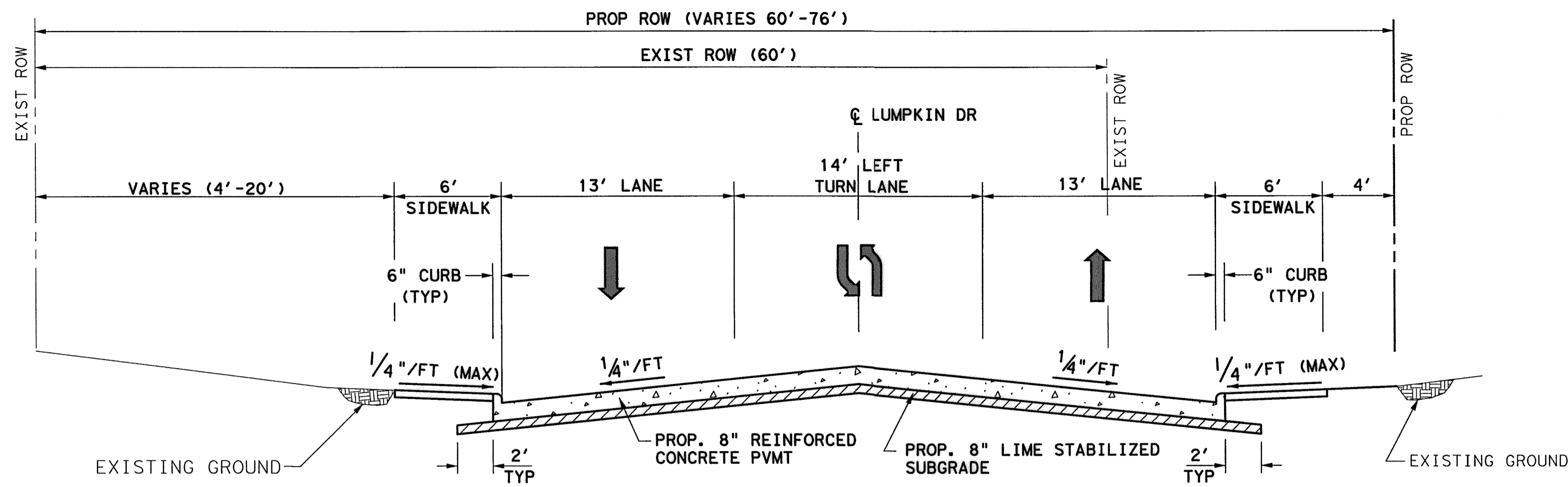
**MEMORIAL CITY REDEVELOPMENT AUTHORITY**



**LUMPKIN ROAD**  
 N-T17000-0012-3  
**PROPOSED TYPICAL SECTIONS**  
 SHEET 1 OF 3  
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

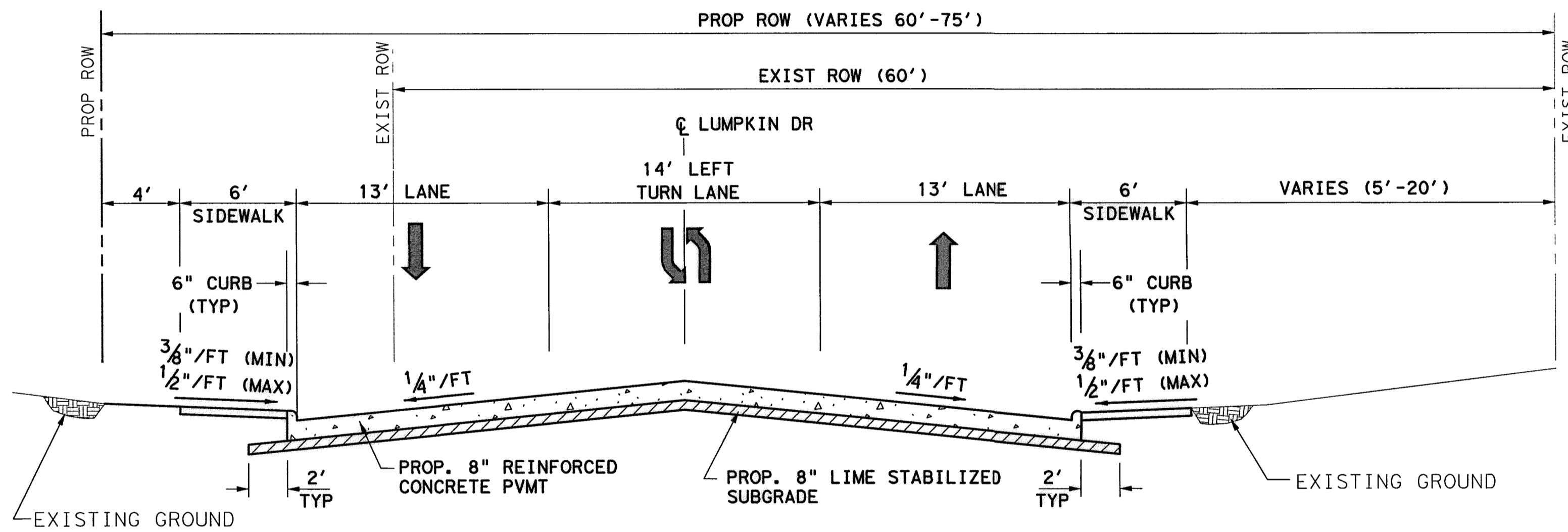
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
HORZ: 1"=5'		
SHEET:	59 OF 226	

9/15/2014 11:01:54 AM M:\gubtr\le pwr\proj\project\130-10384-001\4-01-Drawings\Roadway\50-001-PROPOSED\typical-01



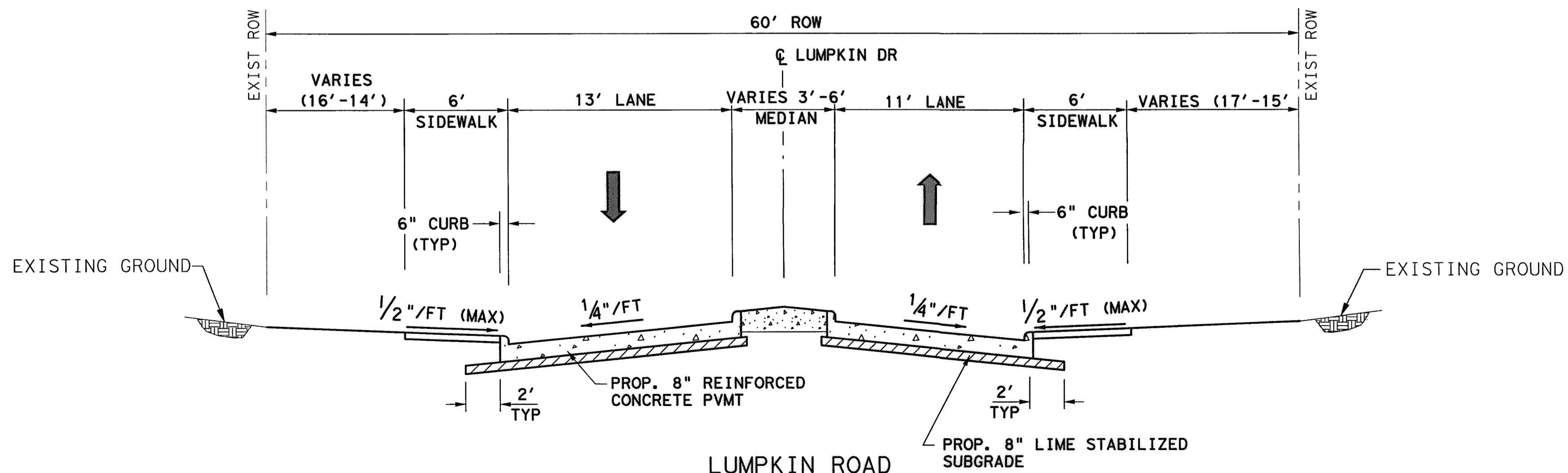
LUMPKIN ROAD

STA 9+87 TO 13+58



LUMPKIN ROAD

STA 16+78 TO STA 17+00  
 STA 18+00 TO STA 20+46

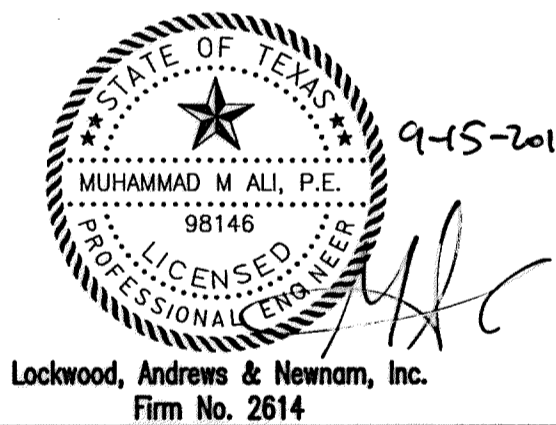


LUMPKIN ROAD

FROM STA 36+56 TO STA 37+14  
 STA 34+78 TO STA. 37+12.50 (TRANSITION FROM 40'-27')

LEGEND  
 --- EXISTING ROW  
 → PROPOSED TRAFFIC FLOW

- NOTE:
- FOR STATION 17+00 TO 18+00 (FAULT ZONE LIMITS) SEE PROPOSED TYPICAL SECTIONS SHEET 3 OF 3 FOR DETAILS
  - NORTHBOUND & SOUTHBOUND LEFT TURN LANES EXIST AT THE INTERSECTION OF WESTVIEW ROAD.
  - REFER TO CITY OF HOUSTON STANDARD DETAIL "CONCRETE PAVEMENT DETAIL" (DWG NO. 02751-01) FOR REINFORCING STEEL BAR SIZES AND SPACINGS.



MEMORIAL CITY REDEVELOPMENT AUTHORITY



LUMPKIN ROAD  
 N-T17000-0012-3  
 PROPOSED TYPICAL SECTIONS

SHEET 2 OF 3

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

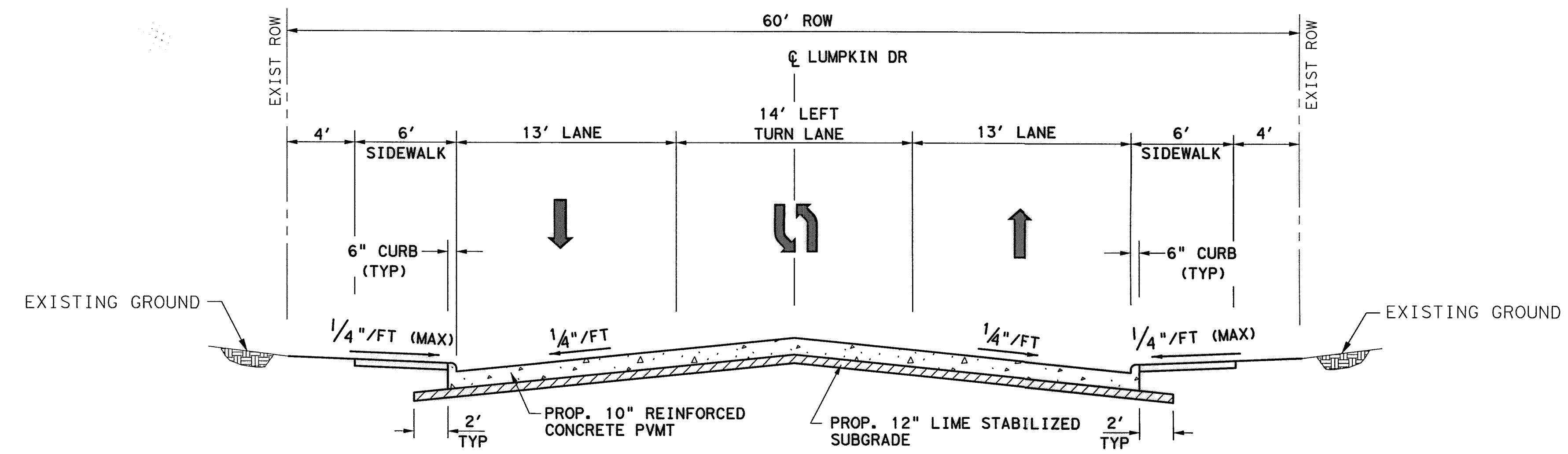
FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
HORZ: 1"=5'	
SHEET: 60 OF 226	

No. DATE REVISIONS APP.  
 11:11:00 AM 9/3/2014  
 \\edpw\edpw\laddco\intproj\wise\Documents\Projects\130-10364-00\14-0-Product\ton\4-01-Drawings\Roadway\51-001+PROP05ED+typical1-02.dgn

APP.
REVISIONS
No.
DATE

**LEGEND**

- EXISTING ROW
- ➔ PROPOSED TRAFFIC FLOW



**LUMPKIN ROAD**  
 WITHIN FAULT ZONE LIMITS  
 (STA. 17+00 TO STA. 18+00)

- NOTE:**
1. NORTHBOUND & SOUTHBOUND LEFT TURN LANES EXIST AT THE INTERSECTION OF WESTVIEW ROAD.
  2. REFER TO CITY OF HOUSTON STANDARD DETAIL "CONCRETE PAVEMENT DETAIL" (DWG NO. 02751-01) FOR REINFORCING STEEL BAR SIZES AND SPACINGS.

9-15-2014

Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY  
 REDEVELOPMENT AUTHORITY**

**LAN Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 PROPOSED  
 TYPICAL SECTIONS  
 SHEET 3 OF 3

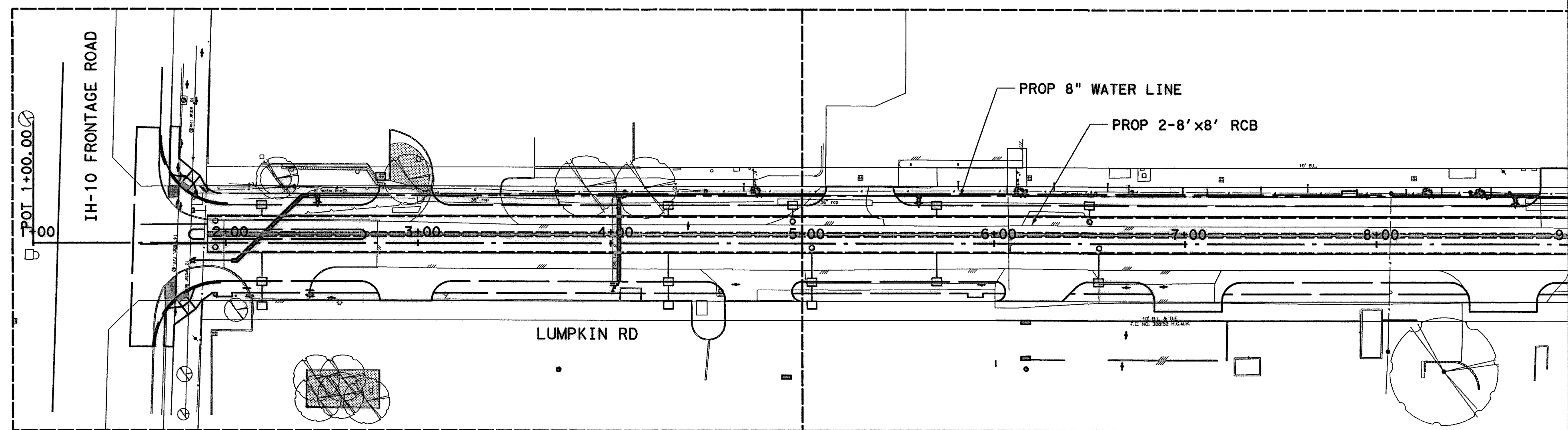
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWO
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG NO.
HORZ: 1"=5'		
SHEET:		
61 OF 226		

pww \\ \ ladbw. ladbw. int\project\wts\Documents\Projects\130-10384-001\4-0-Product\on\4-01-Drawings\Roadway\51-001-PROP\05ED\typical-03.dgn 9/3/2014 11:11:10 AM MUGuthrie

PLAN & PROFILE SHEETS 64 & 96  
BEGIN PROJECT TO STA 5+00

PLAN & PROFILE SHEETS 65 & 97  
STA 5+00 TO STA 9+00



**LEGEND**

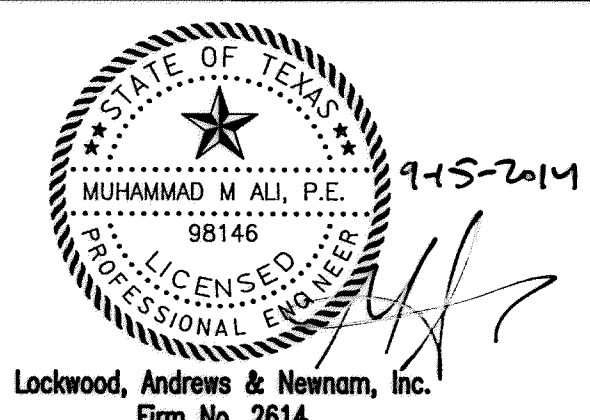
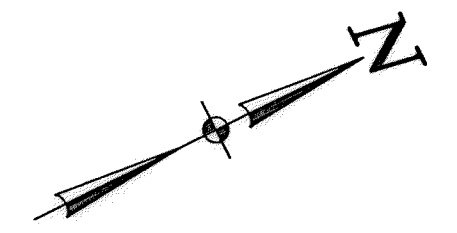
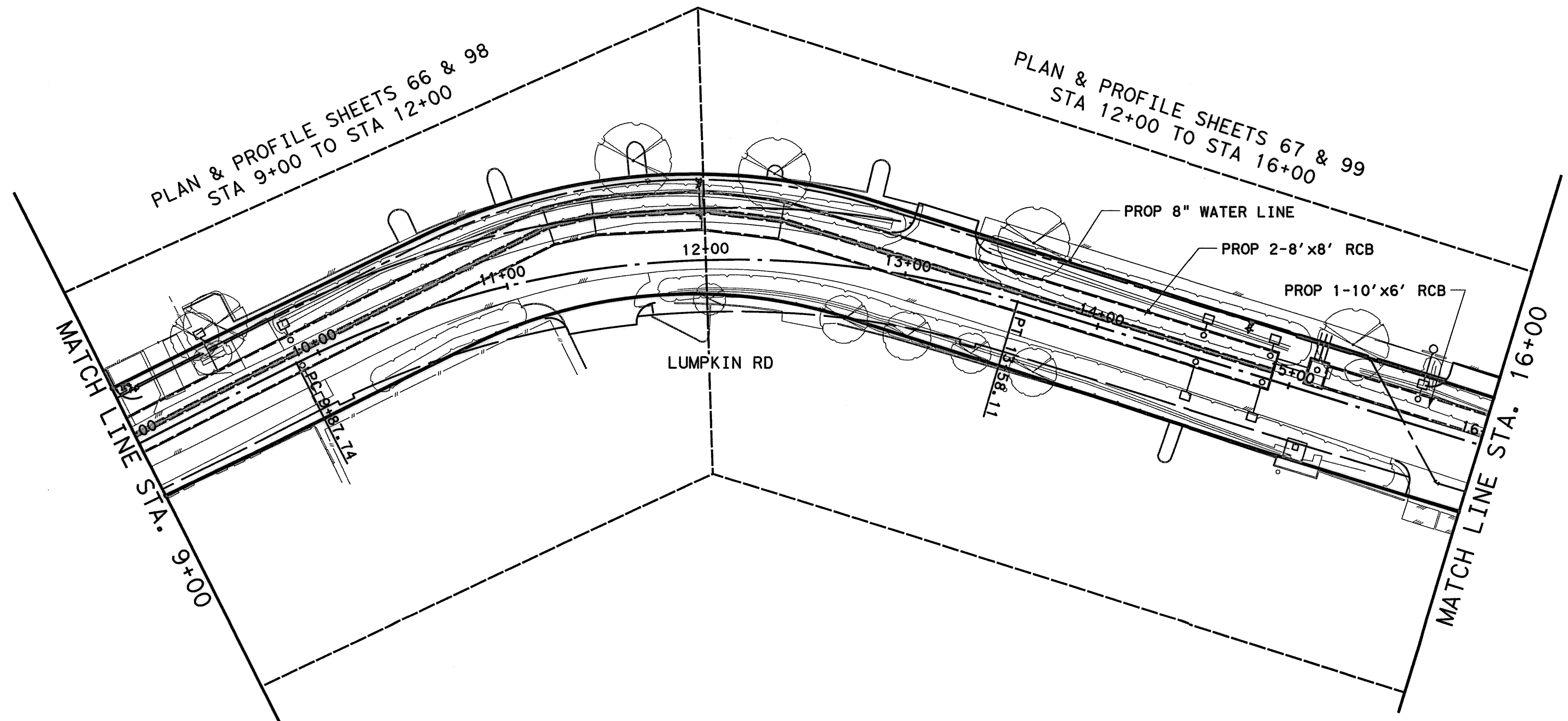
- PROPOSED PVMT
- - - PROPOSED 8" WATERLINE
- PROPOSED 18" SAN SWR
- PROPOSED STM BOXES
- PROPOSED "BB" INLET
- ⊠ PROPOSED C-1 INLET
- PROPOSED MANHOLE
- ⊠ PROPOSED JUNCTION BOX
- ⊕ BH05 APPROXIMATE BORING LOCATION

**NOTE:**

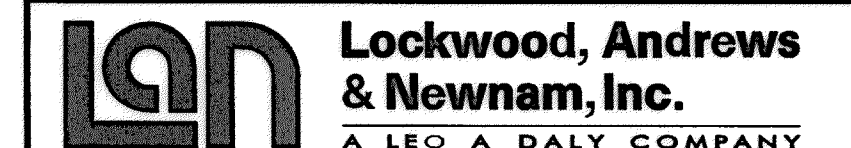
1. THE LAYOUT SKETCH OF THE PROPOSED IMPROVEMENTS IS SHOWN AS APPROXIMATE ONLY. THIS SHEET IS FOR GENERAL INFORMATION. FOR BORING INFORMATION, SEE GEOTECHNICAL INVESTIGATION RECONSTRUCTION OF LUMPKIN ROAD BETWEEN IH10 AND WESTVIEW DRIVE, DATED FEBRUARY 2013, BY AVILES ENGINEERING CORP., REPORT No. G153-10 AND GEOTECHNICAL INVESTIGATION LUMPKIN ROAD FROM WESTVIEW TO NORTHBROOK, DATED MARCH 2014, BY AVILES ENGINEERING CORP., REPORT No. G157-13.

PLAN & PROFILE SHEETS 66 & 98  
STA 9+00 TO STA 12+00

PLAN & PROFILE SHEETS 67 & 99  
STA 12+00 TO STA 16+00



MEMORIAL CITY  
REDEVELOPMENT AUTHORITY



LUMPKIN ROAD  
N-T17000-0012-3

SHEET LAYOUT

SHEET 1 OF 2

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

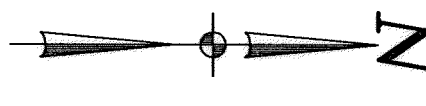
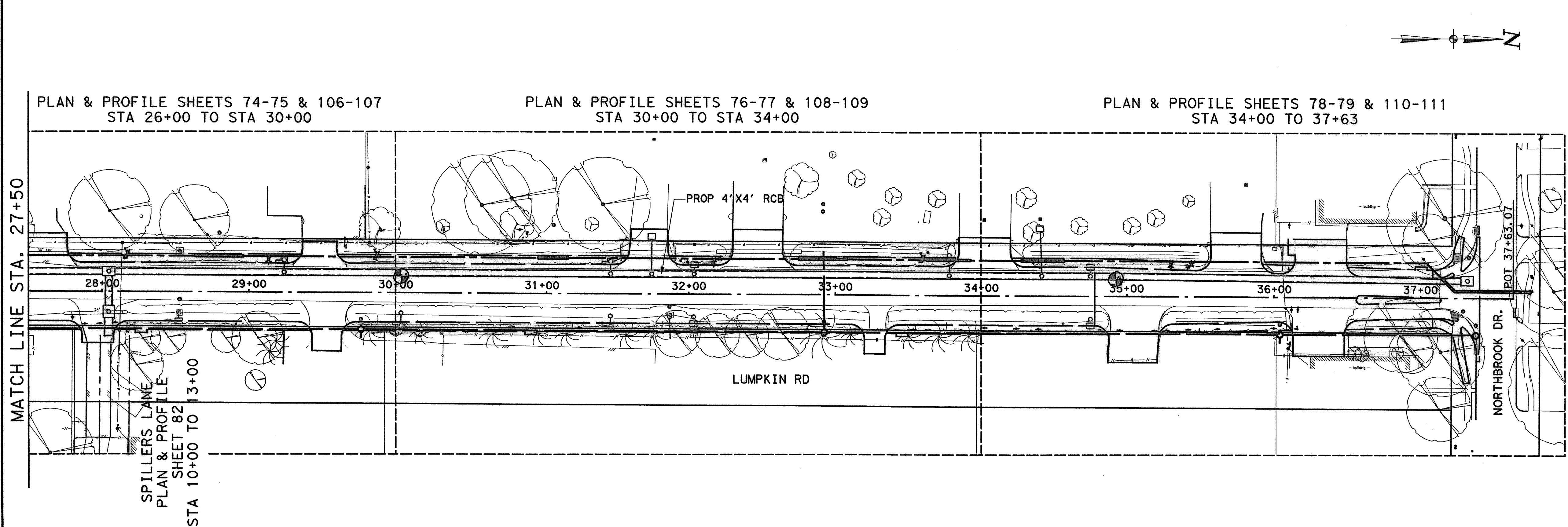
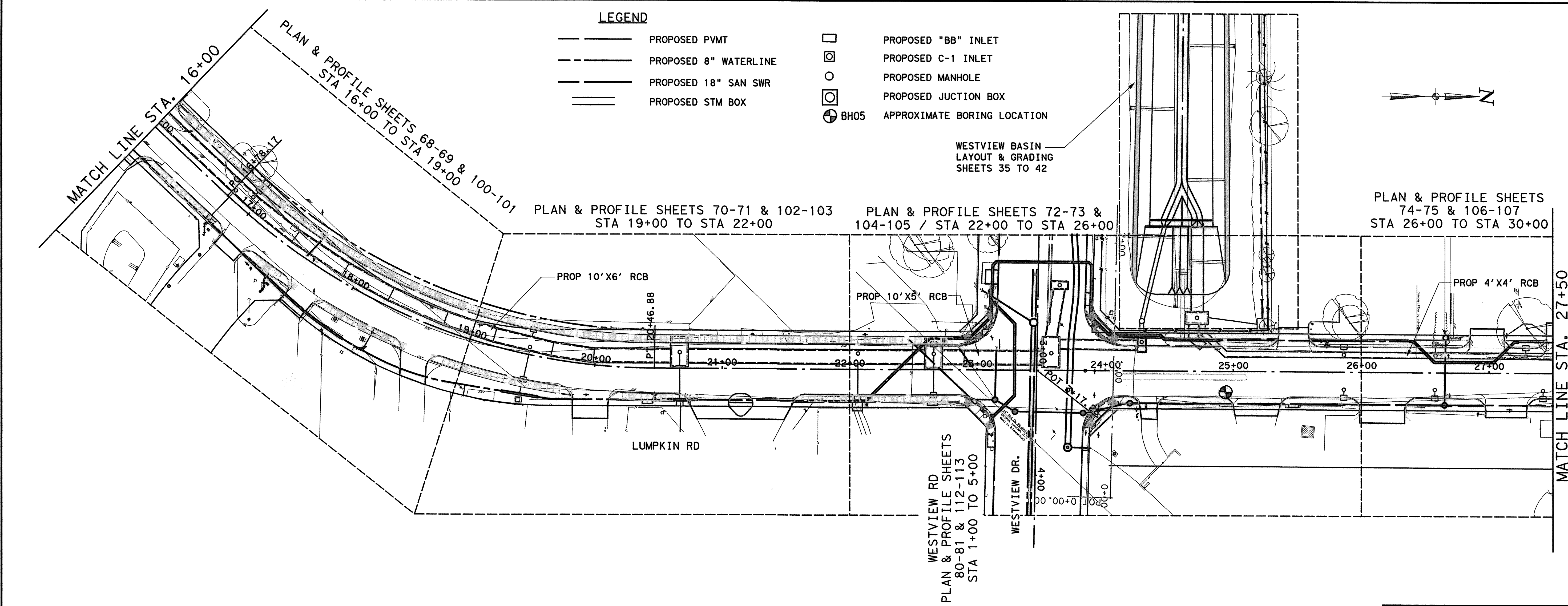
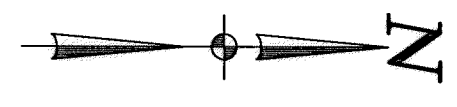
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO. 1	FACILITY
DRAWING SCALE:	CITY DWG NO.
HORZ: 1"=40'	
SHEET:	
62 OF 226	

APP. REVISIONS No. DATE No. DATE  
 MU04th-1e 9/3/2014 11:24:55 AM 9/3/2014  
 pww\l\adpw.ladco.int\proj\wise\Documents\Projects\130-10284-001\4-0-Products\on\4-01-Drawings\General\53-001-Plan\Layout\Sheet+01

**LEGEND**

- PROPOSED PVMT
- - - PROPOSED 8" WATERLINE
- PROPOSED 18" SAN SWR
- PROPOSED STM BOX
- PROPOSED "BB" INLET
- ⊗ PROPOSED C-1 INLET
- PROPOSED MANHOLE
- ⊕ PROPOSED JUNCTION BOX
- ⊕ BH05 APPROXIMATE BORING LOCATION



PLAN & PROFILE SHEETS  
74-75 & 106-107  
STA 26+00 TO STA 30+00

PLAN & PROFILE SHEETS 70-71 & 102-103  
STA 19+00 TO STA 22+00

PLAN & PROFILE SHEETS 72-73 &  
104-105 / STA 22+00 TO STA 26+00

PLAN & PROFILE SHEETS 74-75 & 106-107  
STA 26+00 TO STA 30+00

PLAN & PROFILE SHEETS 76-77 & 108-109  
STA 30+00 TO STA 34+00

PLAN & PROFILE SHEETS 78-79 & 110-111  
STA 34+00 TO STA 37+63

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

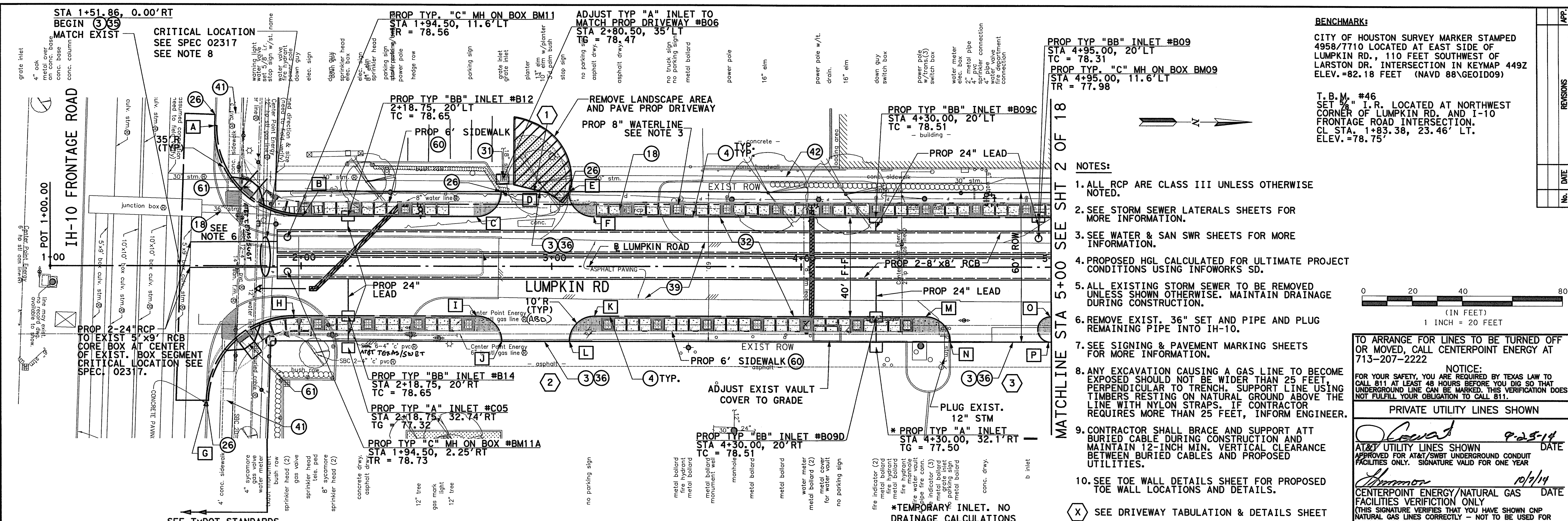
LUMPKIN ROAD  
N-T17000-0012-3  
**SHEET LAYOUT**  
SHEET 2 OF 2

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
HORIZ: 1"=40'	
SHEET:	
63 OF 226	

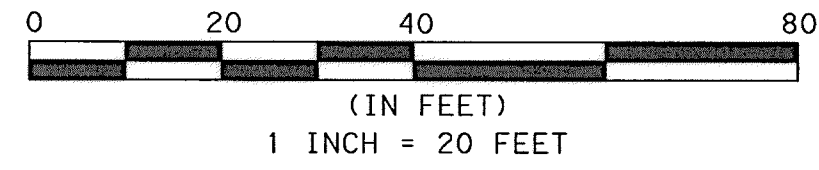
APP. \_\_\_\_\_  
 REVISIONS \_\_\_\_\_  
 No. DATE \_\_\_\_\_  
 11:25:05 AM 9/3/2014 9/3/2014 P:\Drawings\General\54-001-Plan+Layout+Sheet+02 9/3/2014 11:25:05 AM



**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV. = 82.18 FEET (NAVD 88\GEOID09)

T.B.M. #46  
 SET 3/4" I.R. LOCATED AT NORTHWEST  
 CORNER OF LUMPKIN RD. AND I-10  
 FRONTAGE ROAD INTERSECTION.  
 CL STA. 1+83.38, 23.46' LT.  
 ELEV. = 78.75'

- NOTES:**
1. ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
  2. SEE STORM SEWER LATERALS SHEETS FOR MORE INFORMATION.
  3. SEE WATER & SAN SWR SHEETS FOR MORE INFORMATION.
  4. PROPOSED HGL CALCULATED FOR ULTIMATE PROJECT CONDITIONS USING INFOWORKS SD.
  5. ALL EXISTING STORM SEWER TO BE REMOVED UNLESS SHOWN OTHERWISE. MAINTAIN DRAINAGE DURING CONSTRUCTION.
  6. REMOVE EXIST. 36" SET AND PIPE AND PLUG REMAINING PIPE INTO IH-10.
  7. SEE SIGNING & PAVEMENT MARKING SHEETS FOR MORE INFORMATION.
  8. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
  9. CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
  10. SEE TOE WALL DETAILS SHEET FOR PROPOSED TOE WALL LOCATIONS AND DETAILS.
- (X) SEE DRIVEWAY TABULATION & DETAILS SHEET



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

AT&T UTILITY LINES SHOWN DATE 9/25/14  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

Centerpoint Energy/Natural Gas DATE 10/2/14  
 FACILITIES VERIFICATION ONLY  
 THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION. (GAS SERVICE LINES ARE NOT SHOWN). SIGNATURE VALID FOR SIX MONTHS.

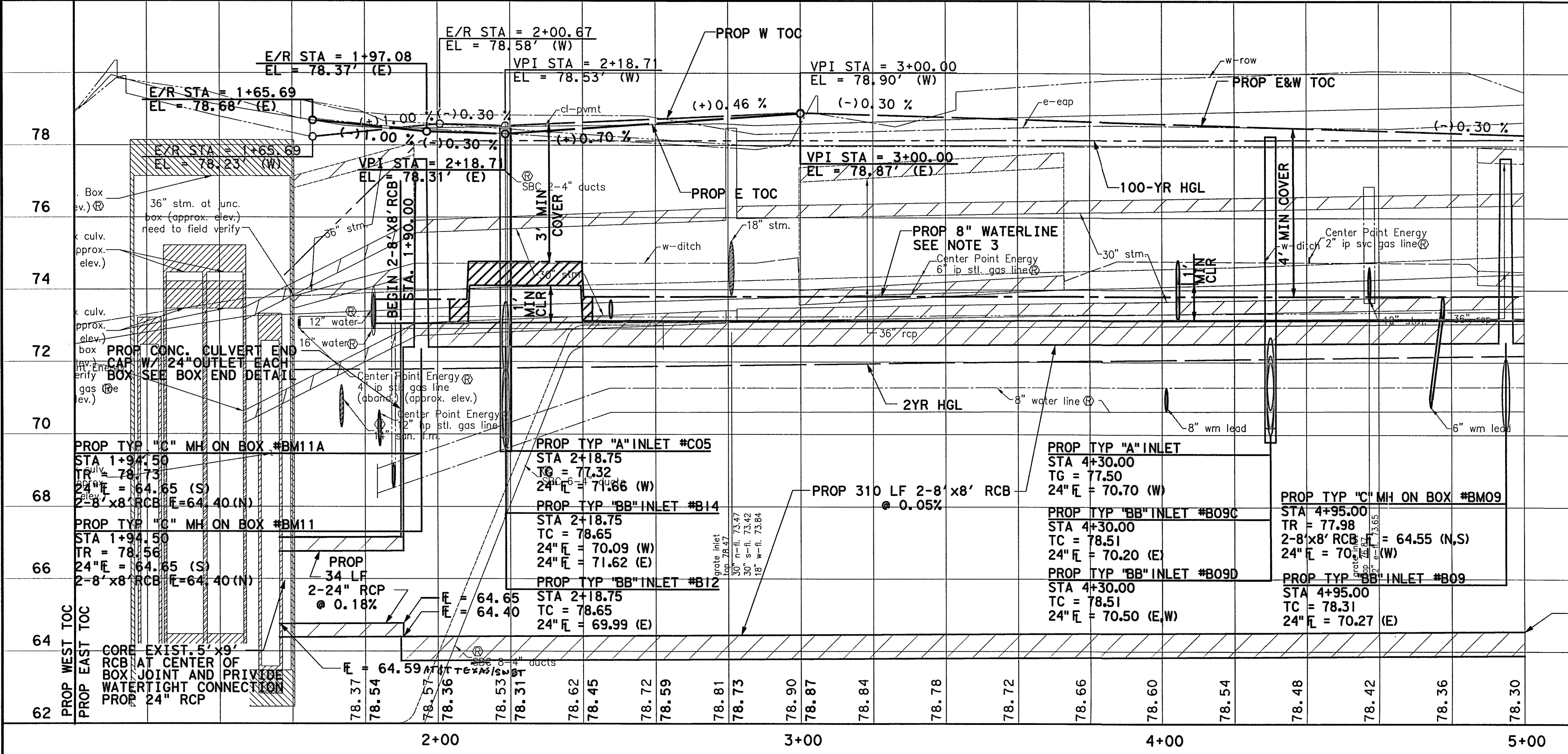
**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

Lockwood, Andrews & Newnam, Inc.  
 A LEG A DAILY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 PLAN & PROFILE VIEW  
 PVMT & STM SWR IMPROVEMENTS  
 BEGIN PROJECT TO STA 5+00  
 SHEET 1 OF 18

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A	PC	1+65.51	56.0 LT
B	PT	1+95.50	20.00 LT
C	PC	2+69.90	20.00 LT
D	PT	2+79.90	30.00 LT
E	PC	3+06.90	30.00 LT
F	PT	3+16.90	20.00 LT
G	PC	1+62.26	53.85 RT
H	PT	1+92.25	20.00 RT
I	PC	2+69.99	20.00 RT
J	PT	2+79.99	29.99 RT
K	PT	3+16.99	20.00 RT
L	PC	3+06.99	30.02 RT
M	PC	4+49.67	20.00 RT
N	PT	4+59.67	30.02 RT
O	PT	4+99.61	20.00 RT
P	PC	4+98.85	29.94 RT



STATE OF TEXAS  
 MUHAMMAD M. ALI, P.E.  
 LICENSED PROFESSIONAL ENGINEER  
 81591  
 9-15-2014

STATE OF TEXAS  
 BRIAN R. WHITNEY, P.E.  
 LICENSED PROFESSIONAL ENGINEER  
 81591  
 9-15-2014

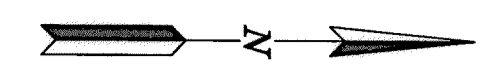
Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

WATER			WASTEWATER			TRAFFIC		
ST. & BRIDGE			STORMWATER			SWQ		
FILE NO. 1						FACILITY		
DRAWING SCALE:						CITY DWG. NO.		
VERT: 1"=2'								
HORZ: 1"=20'								
SHEET:								
64 OF 226								



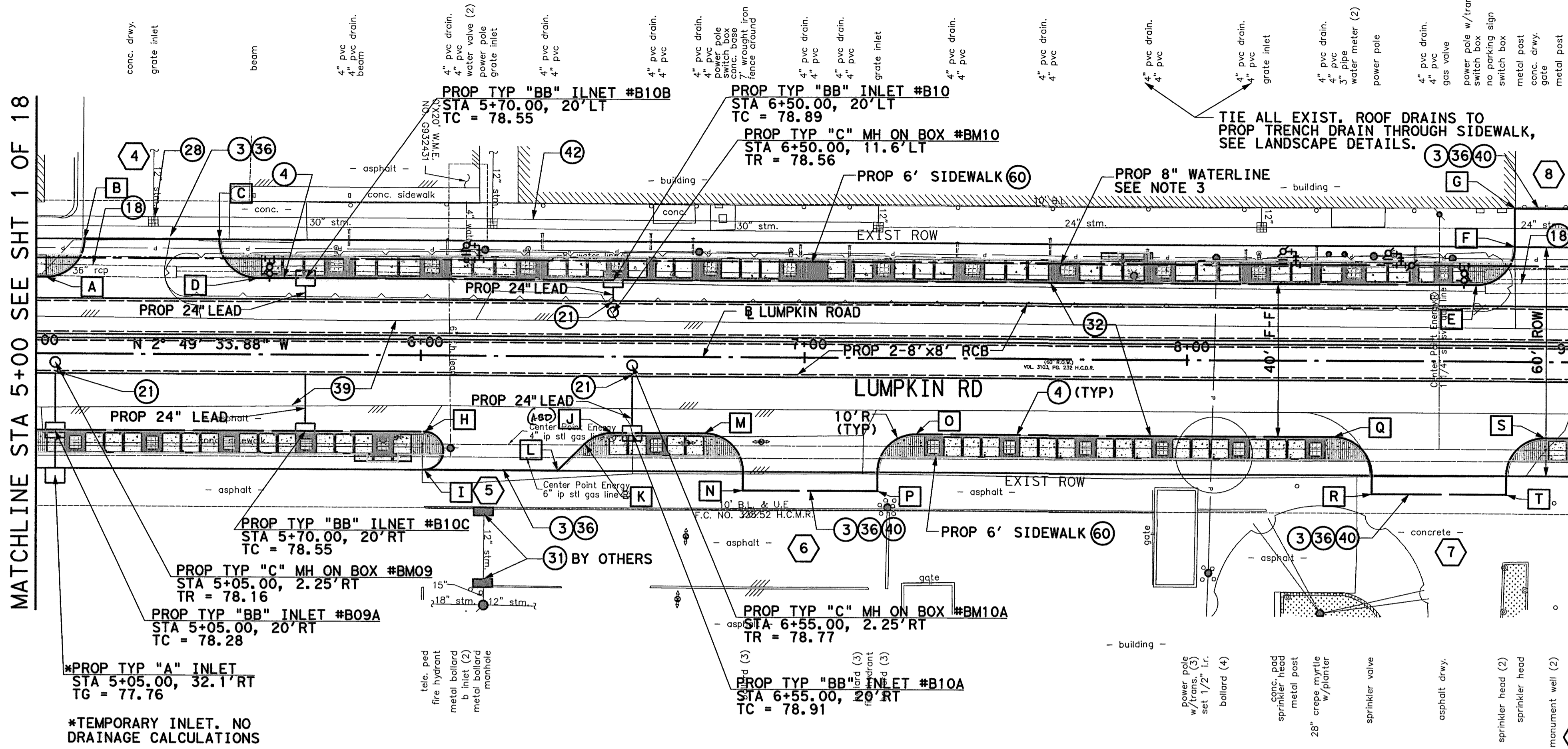
**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV.=82.18 FEET (NAVD 88GEOID09)

T.B.M. #46  
 SET 1/2" I.R. LOCATED AT EAST SIDE  
 OF LUMPKIN ROAD.  
 APPROX. 622 FT NORTH OF LUMPKIN ROAD  
 AND IH 10 INTERSECTION.  
 D STA. 8+07.15, 24.86' RT.  
 ELEV.=80.03'

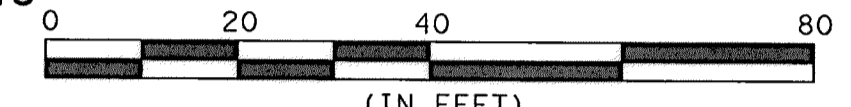


MATCHLINE STA 5+00 SEE SHT 1 OF 18

MATCHLINE STA 9+00 SEE SHT 3 OF 18



- NOTES:**
- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
  - SEE STORM SEWER LATERALS SHEETS FOR MORE INFORMATION.
  - SEE WATER & SAN SWR SHEETS FOR MORE INFORMATION.
  - PROPOSED HGL CALCULATED FOR ULTIMATE PROJECT CONDITIONS USING INFOWORKS SD.
  - ALL EXISTING STORM SEWER TO BE REMOVED UNLESS SHOWN OTHERWISE. MAINTAIN DRAINAGE DURING CONSTRUCTION.
  - SEE SIGNING & PAVEMENT MARKING SHEETS FOR MORE INFORMATION.
  - ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
  - CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
  - SEE TOE WALL DETAILS SHEET FOR PROPOSED TOE WALL LOCATIONS AND DETAILS.
  - SEE TOE WALL DETAILS SHEET FOR PROPOSED TOE WALL LOCATIONS AND DETAILS.
- (X) SEE DRIVEWAY TABULATION & DETAILS SHEET



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

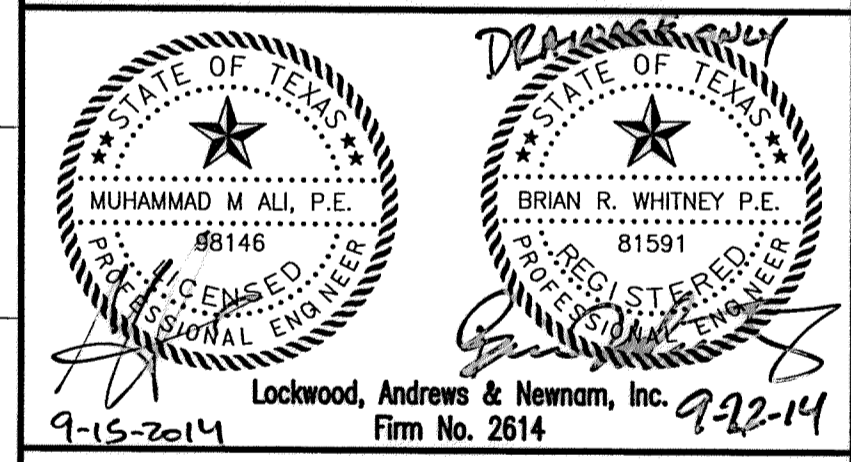
PRIVATE UTILITY LINES SHOWN

AT&T UTILITY LINES SHOWN DATE 9/25/14  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

Centerpoint Energy/NATURAL GAS DATE 10/7/14  
 (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

Centerpoint Energy/UNDERGROUND DATE 10/7/14  
 ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

Lockwood, Andrews & Newnam, Inc. 9-15-2014 Firm No. 2614



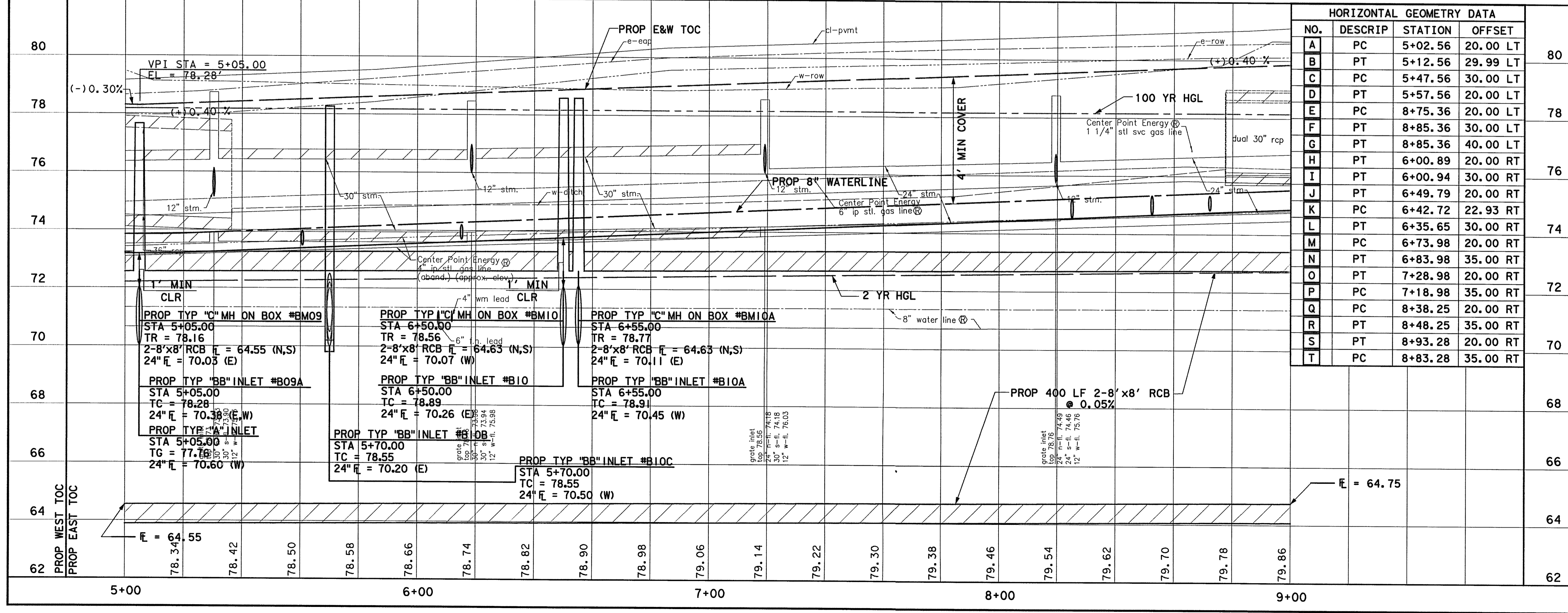
**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEA O A DALY COMPANY

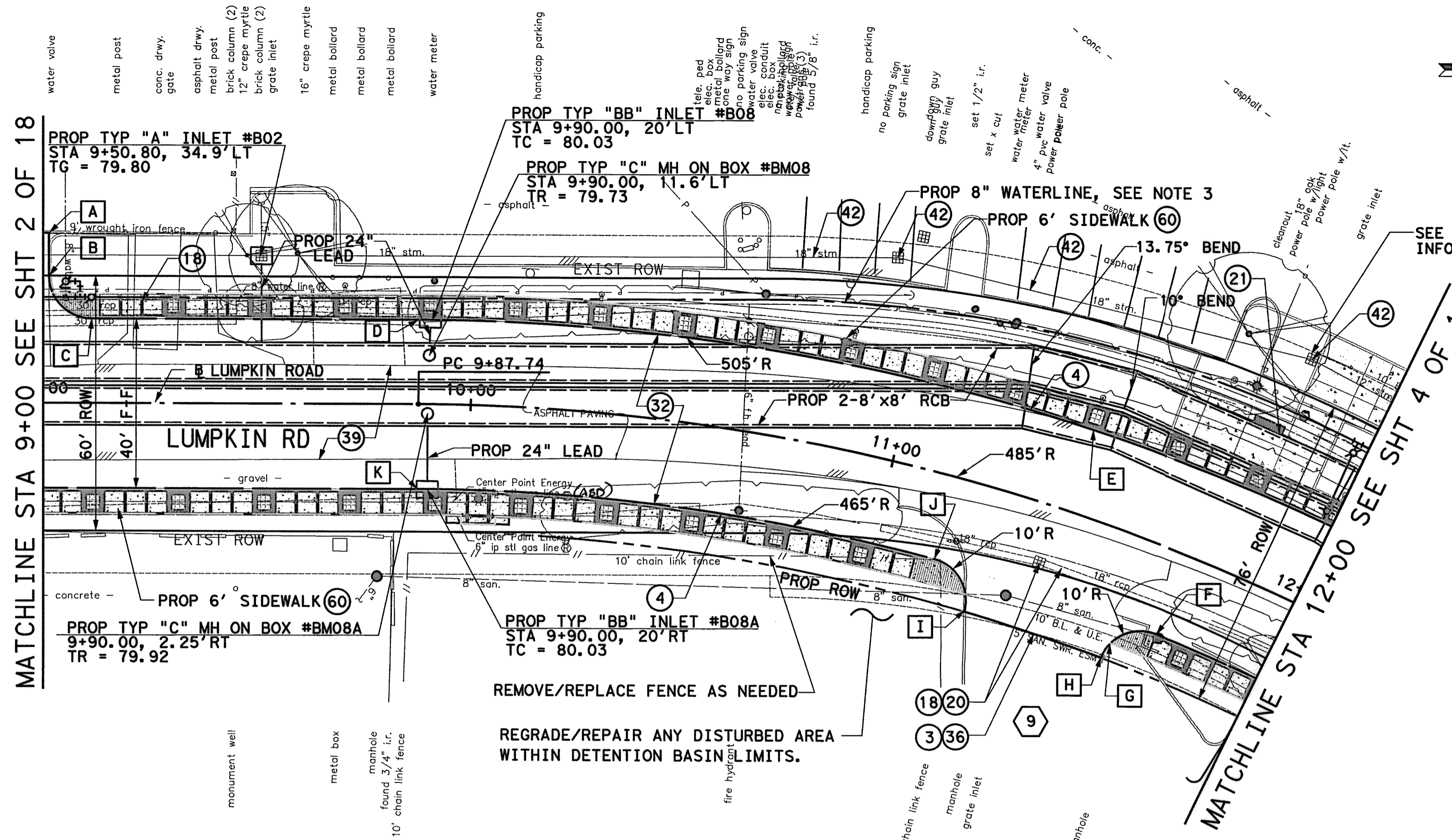
LUMPKIN ROAD  
 N-T17000-0012-3  
 PLAN & PROFILE VIEW  
 PVMT & STM SWR IMPROVEMENTS  
 STA 5+00 TO STA 9+00  
 SHEET 2 OF 18

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DRG NO.	
VERT: 1"=2'		
HORZ: 1"=20'		
SHEET:	65 OF 226	



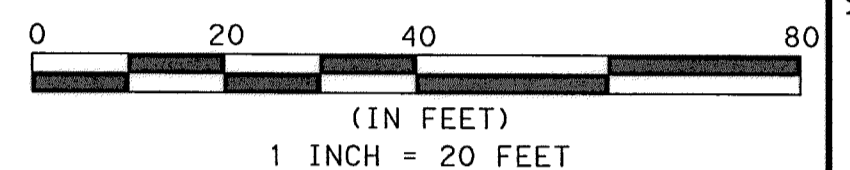
HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A	PC	5+02.56	20.00 LT
B	PT	5+12.56	29.99 LT
C	PC	5+47.56	30.00 LT
D	PT	5+57.56	20.00 LT
E	PC	8+75.36	20.00 LT
F	PT	8+85.36	30.00 LT
G	PT	8+85.36	40.00 LT
H	PT	6+00.89	20.00 RT
I	PT	6+00.94	30.00 RT
J	PT	6+49.79	20.00 RT
K	PC	6+42.72	22.93 RT
L	PT	6+35.65	30.00 RT
M	PC	6+73.98	20.00 RT
N	PT	6+83.98	35.00 RT
O	PT	7+28.98	20.00 RT
P	PC	7+18.98	35.00 RT
Q	PC	8+38.25	20.00 RT
R	PT	8+48.25	35.00 RT
S	PT	8+93.28	20.00 RT
T	PC	8+83.28	35.00 RT



**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV. = 82.18 FEET (NAVD 88GEOID09)

T. B. M. #45  
 SET 1/2" I.R. LOCATED WEST SIDE OF  
 LUMPKIN ROAD,  
 APPROX. 587 FT SOUTH OF LUMPKIN  
 ROAD AND LARSTON DRIVE INTERSECTION.  
 D STA. 11+04.75, 40.32' LT  
 ELEV. = 80.32'

- NOTES:**
- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
  - SEE STORM SEWER LATERALS SHEETS FOR MORE INFORMATION.
  - SEE WATER & SAN SWR SHEETS FOR MORE INFORMATION.
  - PROPOSED HGL CALCULATED FOR ULTIMATE PROJECT CONDITIONS USING INFOWORKS SD.
  - ALL EXISTING STORM SEWER TO BE REMOVED UNLESS SHOWN OTHERWISE. MAINTAIN DRAINAGE DURING CONSTRUCTION.
  - SEE SIGNING & PAVEMENT MARKING SHEETS FOR MORE INFORMATION.
  - ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
  - CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
  - SEE TOE WALL DETAILS SHEET FOR PROPOSED TOE WALL LOCATIONS AND DETAILS.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

*Signature* 9/25/14 DATE  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*Signature* 10/7/14 DATE  
 APPROVED FOR CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*Signature* 10/7/14 DATE  
 APPROVED FOR CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEQ A DALY COMPANY

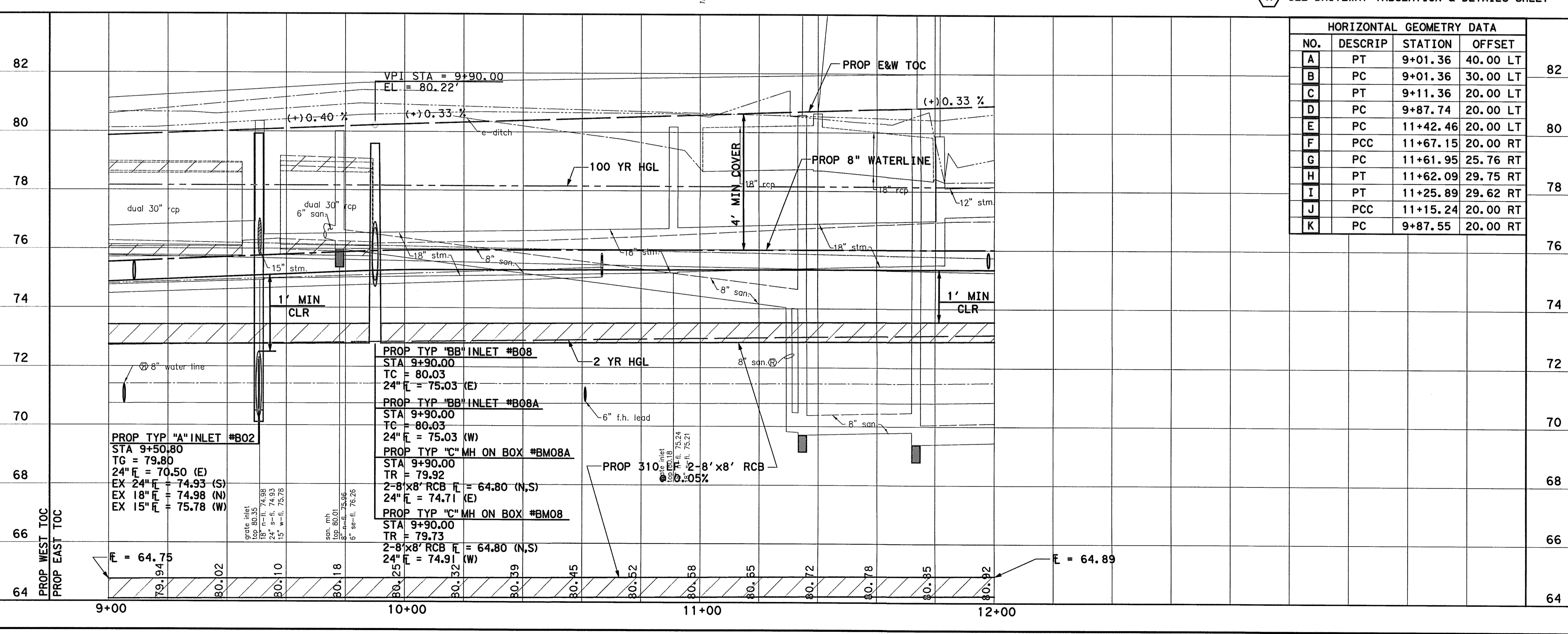
MUHAMMAD M. ALI, P.E.  
 81591  
 9-15-2014

BRIAN R. WHITNEY, P.E.  
 81591  
 9-22-14

**LUMPKIN ROAD**  
 N-T17000-0012-3  
 PLAN & PROFILE VIEW  
 PVMT & STM SWR IMPROVEMENTS  
 STA 9+00 TO STA 12+00  
 SHEET 3 OF 18

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'	HORIZ: 1"=20'	
SHEET:	66 OF 226	



**HORIZONTAL GEOMETRY DATA**

NO.	DESCRIP	STATION	OFFSET
A	PT	9+01.36	40.00 LT
B	PC	9+01.36	30.00 LT
C	PT	9+11.36	20.00 LT
D	PC	9+87.74	20.00 LT
E	PC	11+42.46	20.00 LT
F	PCC	11+67.15	20.00 RT
G	PC	11+61.95	25.76 RT
H	PT	11+62.09	29.75 RT
I	PT	11+25.89	29.62 RT
J	PCC	11+15.24	20.00 RT
K	PC	9+87.55	20.00 RT

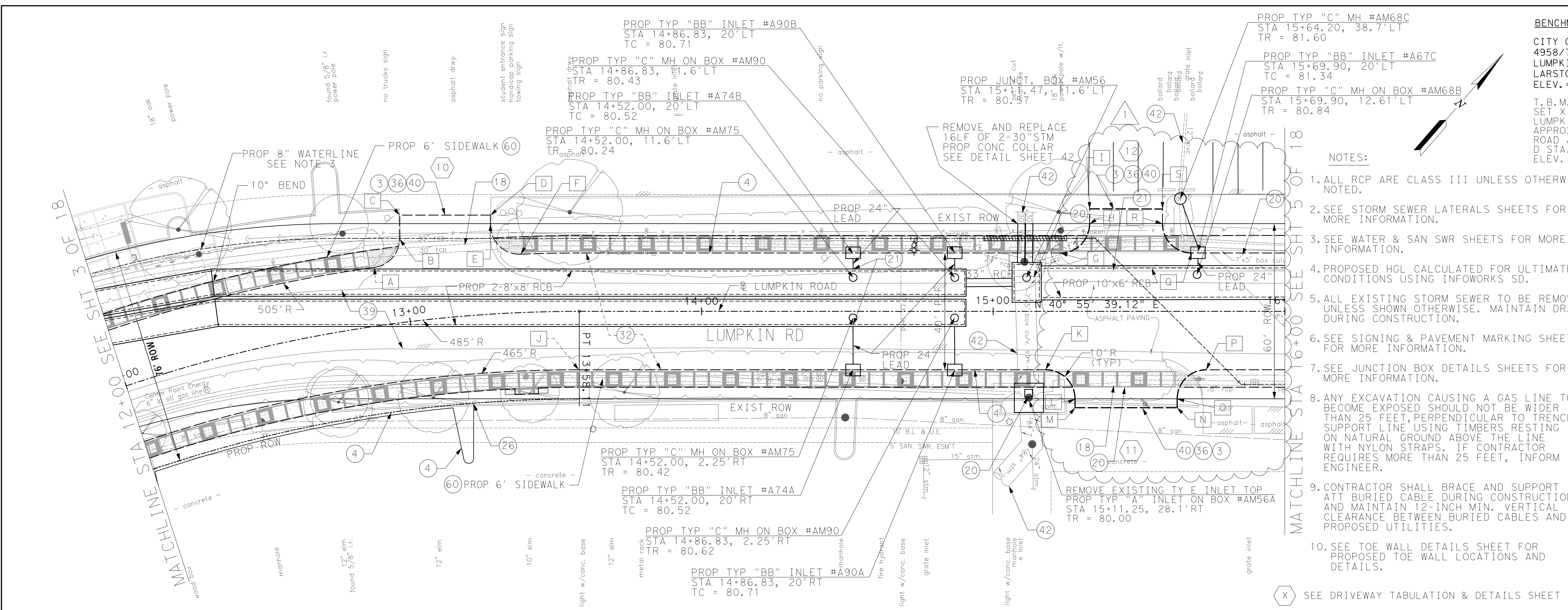
MATCHLINE STA 9+00 SEE SHT 2 OF 18

MATCHLINE STA 12+00 SEE SHT 4 OF 18

APP. REVISIONS No. DATE

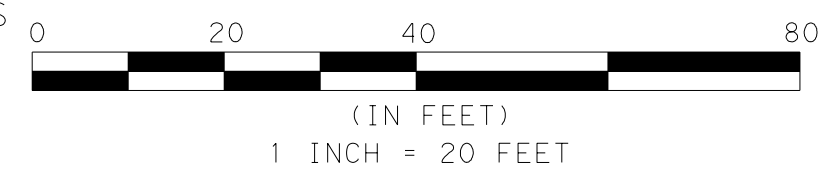
MuGuthrie 9/17/2014 3:24:03 PM

pw \\ \ l adpw. l adco. int\proj\ctw\se\Documents\Projects\130-10384-001\4-B-Production\4-01-Drawings\Roadway\57-001-P&P-RDWY-03.dgn



**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV. = 82.18 FEET (NAVD 88GEOID09)  
 T. B. M. #44  
 SET X CUT LOCATED WEST SIDE OF  
 LUMPKIN ROAD.  
 APPROX. 166 FT SOUTH OF LUMPKIN  
 ROAD AND LARSTON DRIVE INTERSECTION.  
 D STA. 15+08.09, 17.04' LT  
 ELEV. = 82.25'

- NOTES:**
- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
  - SEE STORM SEWER LATERALS SHEETS FOR MORE INFORMATION.
  - SEE WATER & SAN SWR SHEETS FOR MORE INFORMATION.
  - PROPOSED HGL CALCULATED FOR ULTIMATE PROJECT CONDITIONS USING INFOWORKS SD.
  - ALL EXISTING STORM SEWER TO BE REMOVED UNLESS SHOWN OTHERWISE. MAINTAIN DRAINAGE DURING CONSTRUCTION.
  - SEE SIGNING & PAVEMENT MARKING SHEETS FOR MORE INFORMATION.
  - SEE JUNCTION BOX DETAILS SHEETS FOR MORE INFORMATION.
  - ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
  - CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
  - SEE TOE WALL DETAILS SHEET FOR PROPOSED TOE WALL LOCATIONS AND DETAILS.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

AT&T UTILITY LINES SHOWN DATE APPROVED FOR AT&T/SWB UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

CENTERPOINT ENERGY/NATURAL GAS DATE FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

CENTERPOINT ENERGY/UNDERGROUND DATE ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



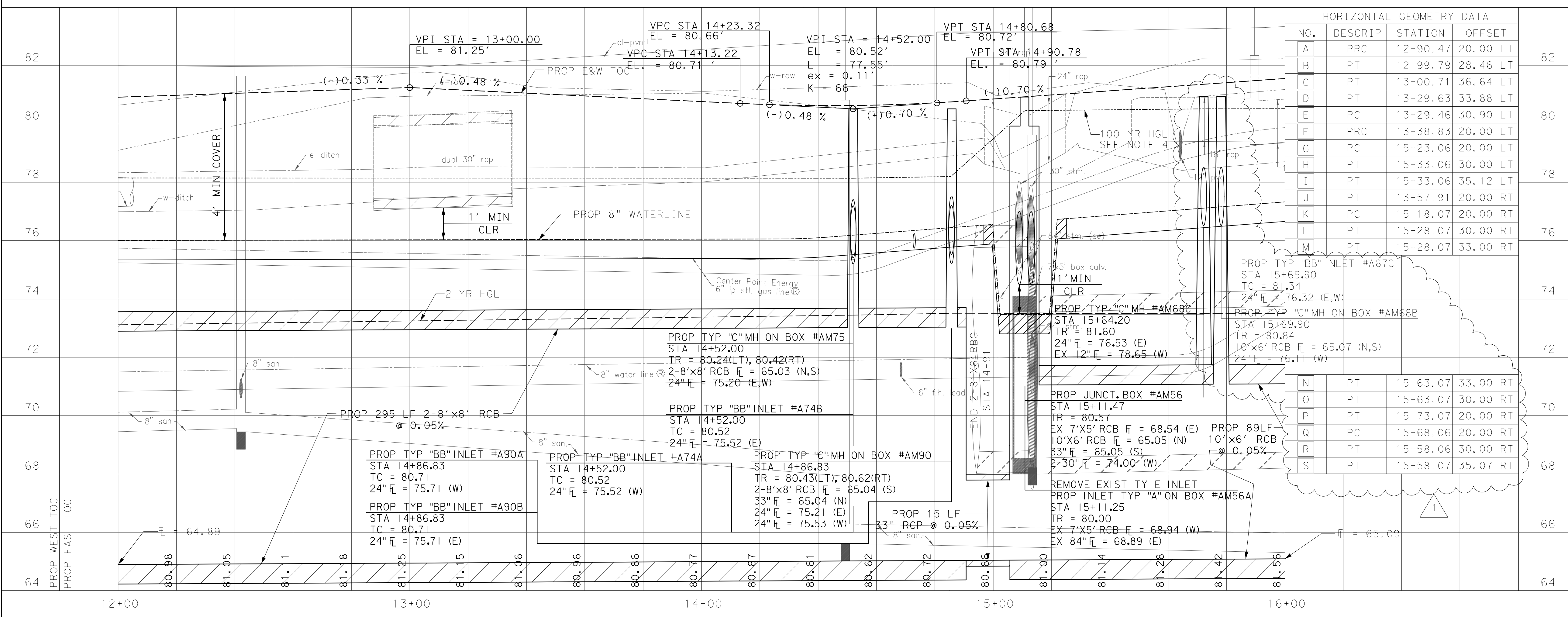
MEMORIAL CITY REDEVELOPMENT AUTHORITY



LUMPKIN ROAD  
 N-T17000-0012-3  
 PLAN & PROFILE VIEW  
 PVMT & STM SWR IMPROVEMENTS  
 STA 12+00 TO STA 16+00  
 SHEET 4 OF 18

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'	HORIZ: 1"=20'	
SHEET:	67 OF 226	

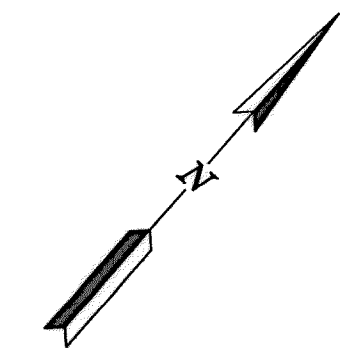


**HORIZONTAL GEOMETRY DATA**

NO.	DESCRIP	STATION	OFFSET
A	PRC	12+90.47	20.00 LT
B	PT	12+99.79	28.46 LT
C	PT	13+00.71	36.64 LT
D	PT	13+29.63	33.88 LT
E	PC	13+29.46	30.90 LT
F	PRC	13+38.83	20.00 LT
G	PC	15+23.06	20.00 LT
H	PT	15+33.06	30.00 LT
I	PT	15+33.06	35.12 LT
J	PT	13+57.91	20.00 RT
K	PC	15+18.07	20.00 RT
L	PT	15+28.07	30.00 RT
M	PT	15+28.07	33.00 RT

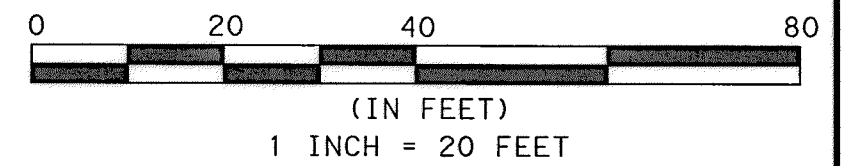
**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET WEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV. = 82.18 FEET (NAVD 88\GEOID09)

T. B. M. #43  
 SET 1/2" I. R. LOCATED EAST SIDE OF  
 LUMPKIN ROAD.  
 APPROX. 361 FT SOUTH OF LUMPKIN ROAD  
 AND WESTVIEW DRIVE INTERSECTION.  
 D STA. 19+50.97, 26.24' RT.  
 ELEV. = 85.17'



**NOTES:**

1. ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
2. SEE STORM SEWER LATERALS SHEETS FOR MORE INFORMATION.
3. SEE WATER & SAN SWR SHEETS FOR MORE INFORMATION.
4. ALL EXISTING STORM SEWER TO BE REMOVED UNLESS SHOWN OTHERWISE. MAINTAIN DRAINAGE DURING CONSTRUCTION.
5. REGRADE EXIST SWALE TO NORTH UNDER DRIVE TO PIPE OPENING AT STA 19+10
6. SEE SIGNING & PAVEMENT MARKING SHEETS FOR INFORMATION.
7. SEE JUNCTION BOX DETAILS SHEETS FOR MORE INFORMATION.
8. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
9. CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
10. SEE TOE WALL DETAILS SHEET FOR PROPOSED TOE WALL LOCATIONS AND DETAILS.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222  
**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINE CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

*Cawant* 9/25/14  
 AT&T UTILITY LINES SHOWN DATE APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR.  
*Shumco* 10/2/14  
 CENTERPOINT ENERGY/NATURAL GAS DATE FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN GNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.  
*Shumco* 10/7/14  
 CENTERPOINT ENERGY/UNDERGROUND DATE ELECTRICAL FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

**STATE OF TEXAS**  
**LOCKWOOD, ANDREWS & NEWNAM, INC.**  
 LICENSED PROFESSIONAL ENGINEER  
 BRIAN R. WHITNEY, P.E.  
 LICENSE NO. 81591  
 9-15-2014  
 Firm No. 2614

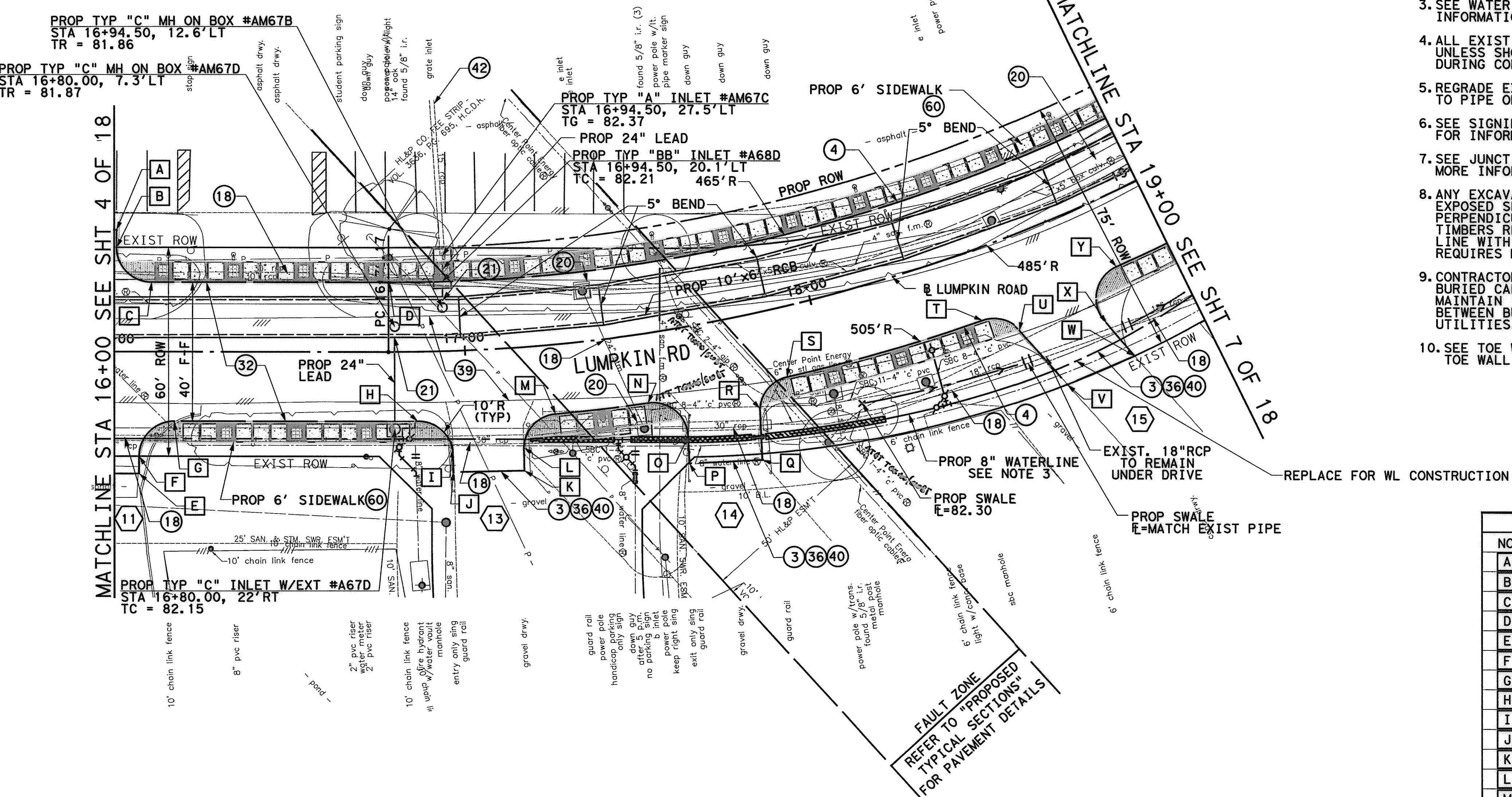
**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DAILY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 PLAN VIEW  
 PVMT & STM SWR IMPROVEMENTS  
 STA 16+00 TO STA 19+00  
 SHEET 5 OF 18

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG NO.
VERT: 1"=2'	SHEET: 68 OF 226	
HORIZ: 1"=20'		



SEE PROFILE VIEW SHEET 6 OF 18

FAULT ZONE  
 REFER TO "PROPOSED TYPICAL SECTIONS" FOR PAVEMENT DETAILS

**HORIZONTAL GEOMETRY DATA**

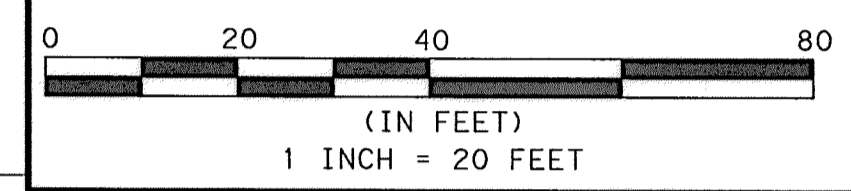
NO.	DESCRIP	STATION	OFFSET
A	PT	16+00.63	35.00 LT
B	PC	16+00.62	30.00 LT
C	PT	16+10.62	20.00 LT
D	PC	16+78.37	20.00 LT
E	PT	16+07.03	35.00 RT
F	PC	16+07.03	30.00 RT
G	PT	16+17.06	20.00 RT
H	PRC	16+86.19	20.00 RT
I	PT	16+95.47	28.17 RT
J	PT	16+95.40	34.79 RT
K	PT	17+14.34	35.40 RT
L	PC	17+14.65	28.79 RT
M	PRC	17+24.01	20.00 RT
N	PT	17+49.55	20.00 RT
O	PT	17+58.90	31.18 RT
P	PT	17+58.05	38.86 RT
Q	PT	17+77.24	41.71 RT
R	PC	17+79.40	27.21 RT
S	PRC	17+88.47	20.00 RT
T	PRC	18+44.53	20.00 RT
U	PT	18+53.32	26.33 RT
V	PT	18+58.19	45.79 RT
W	PT	18+77.71	45.53 RT
X	PC	18+75.86	33.62 RT
Y	PRC	18+84.61	20.00 RT

(X) SEE DRIVEWAY TABULATION & DETAILS SHEET

9/11/2014 9:57:15 AM Mujahidh...  
 9/11/2014 9:57:15 AM Mujahidh...  
 9/11/2014 9:57:15 AM Mujahidh...  
 9/11/2014 9:57:15 AM Mujahidh...

APP.	
REVISIONS	
No.	DATE

NOTES:  
 1. PROPOSED HGL CALCULATED FOR ULTIMATE PROJECT CONDITIONS USING INFOWORKS SD.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

NOTICE:  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

*[Signature]* 9-25-14 DATE  
 AT&T UTILITY LINES SHOWN APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*[Signature]* 10/7/14 DATE  
 CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP FOR NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

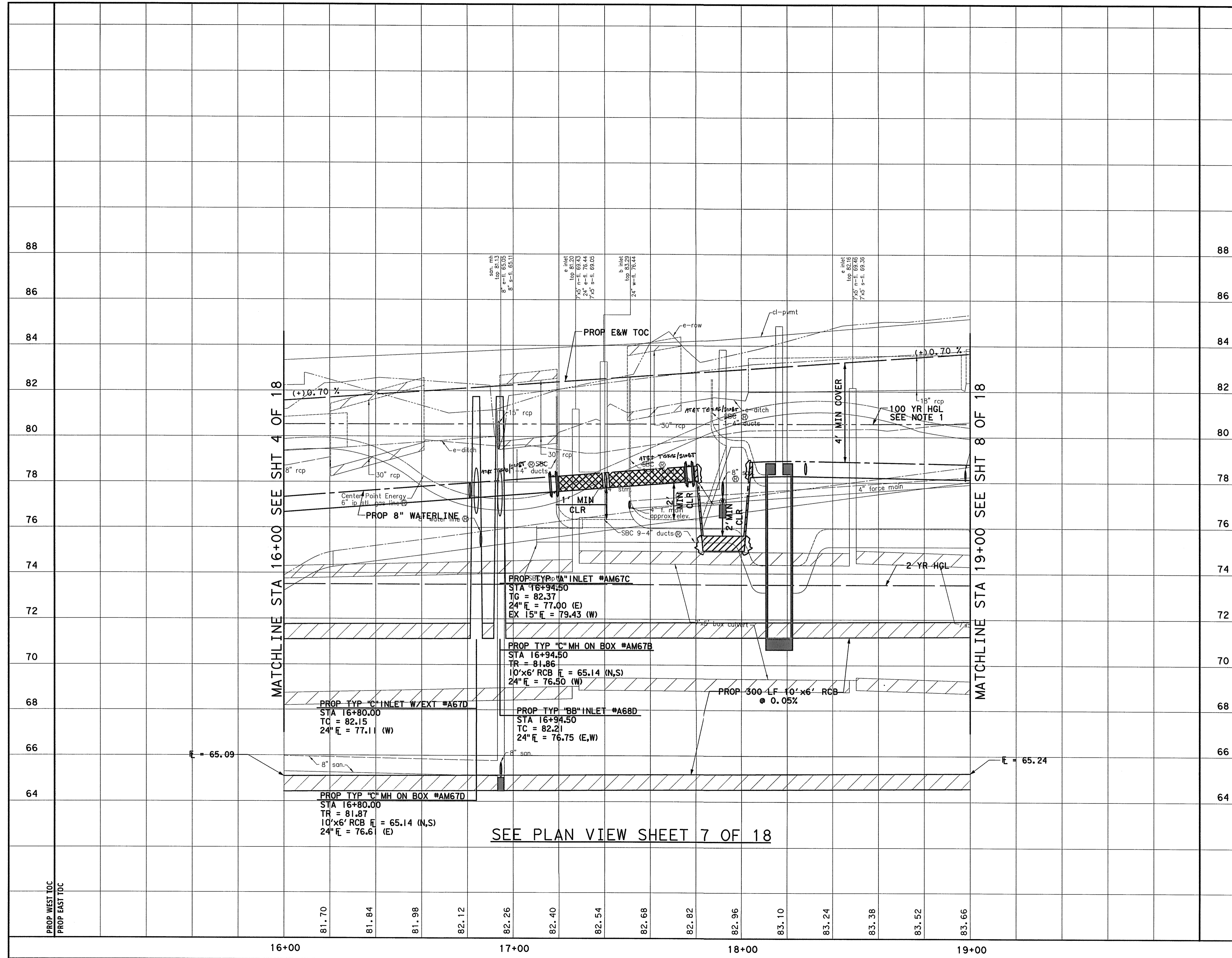
*[Signature]* 10/7/14 DATE  
 CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

MEMORIAL CITY REDEVELOPMENT AUTHORITY

LUMPKIN ROAD  
 N-117000-0012-3  
 PROFILE VIEW  
 PVMT & STM SWR IMPROVEMENTS  
 STA 16+00 TO STA 19+00  
 SHEET 6 OF 18

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG. NO.	
VERT: 1"=2'		
HORIZ: 1"=20'		
SHEET:	69 OF 226	



SEE PLAN VIEW SHEET 7 OF 18

MATCHLINE STA 16+00 SEE SHT 4 OF 18

MATCHLINE STA 19+00 SEE SHT 8 OF 18

88

88

86

86

84

84

82

82

80

80

78

78

76

76

74

74

72

72

70

70

68

68

66

66

64

64

PROP WEST TOC  
 PROP EAST TOC

16+00

17+00

18+00

19+00

**BENCHMARK:**

CITY OF HOUSTON SURVEY MARKER STAMPED  
4958/7710 LOCATED AT EAST SIDE OF  
LUMPKIN RD., 110 FEET SOUTHWEST OF  
LARSTON DR. INTERSECTION IN KEYMAP 449Z  
ELEV. =82.18 FEET (NAVD 88\GEOID09)

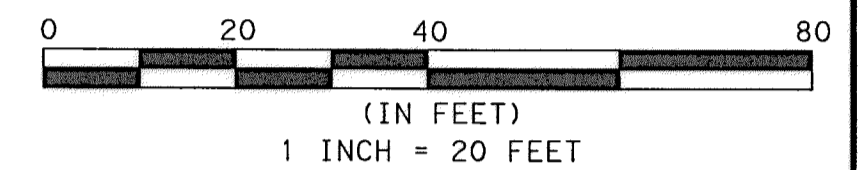
T. B. M. #42

SET 1/2" I.R. LOCATED EAST SIDE OF  
LUMPKIN ROAD,  
APPROX. 361 FT SOUTH OF LUMPKIN  
ROAD AND WESTVIEW DRIVE INTERSECTION.  
D STA. 19+50.97, 26.24' RT.  
ELEV. =85.17'

No.	DATE	REVISIONS

**NOTES:**

1. ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
2. SEE STORM SEWER LATERALS SHEETS FOR MORE INFORMATION.
3. SEE WATER & SAN SWR SHEETS FOR MORE INFORMATION.
4. ALL EXISTING STORM SEWER TO BE REMOVED UNLESS SHOWN OTHERWISE. MAINTAIN DRAINAGE DURING CONSTRUCTION.
5. REMOVE EXIST 18" CULVERT TO DRIVE AND GRADE DITCH TO EXIST 18" RCP TO REMAIN.
6. SEE SIGNING & PAVEMENT MARKING SHEETS FOR MORE INFORMATION.
7. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
8. CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
9. SEE TOE WALL DETAILS SHEET FOR PROPOSED TOE WALL LOCATIONS AND DETAILS.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

*Almont* 9/25/19  
DATE 9/25/19  
AT&T UTILITY LINES SHOWN APPROVED FOR AT&T/SWET UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*Almont* 10/7/19  
DATE 10/7/19  
CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*Almont* 10/7/19  
DATE 10/7/19  
CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

*Almont* 9-12-19  
DATE 9-12-19  
Lockwood, Andrews & Newnam, Inc. Firm No. 2614

MUHAMMAD M. ALI, P.E.  
9846

BRIAN R. WHITNEY, P.E.  
81591

Lockwood, Andrews & Newnam, Inc. 9-12-19  
Firm No. 2614

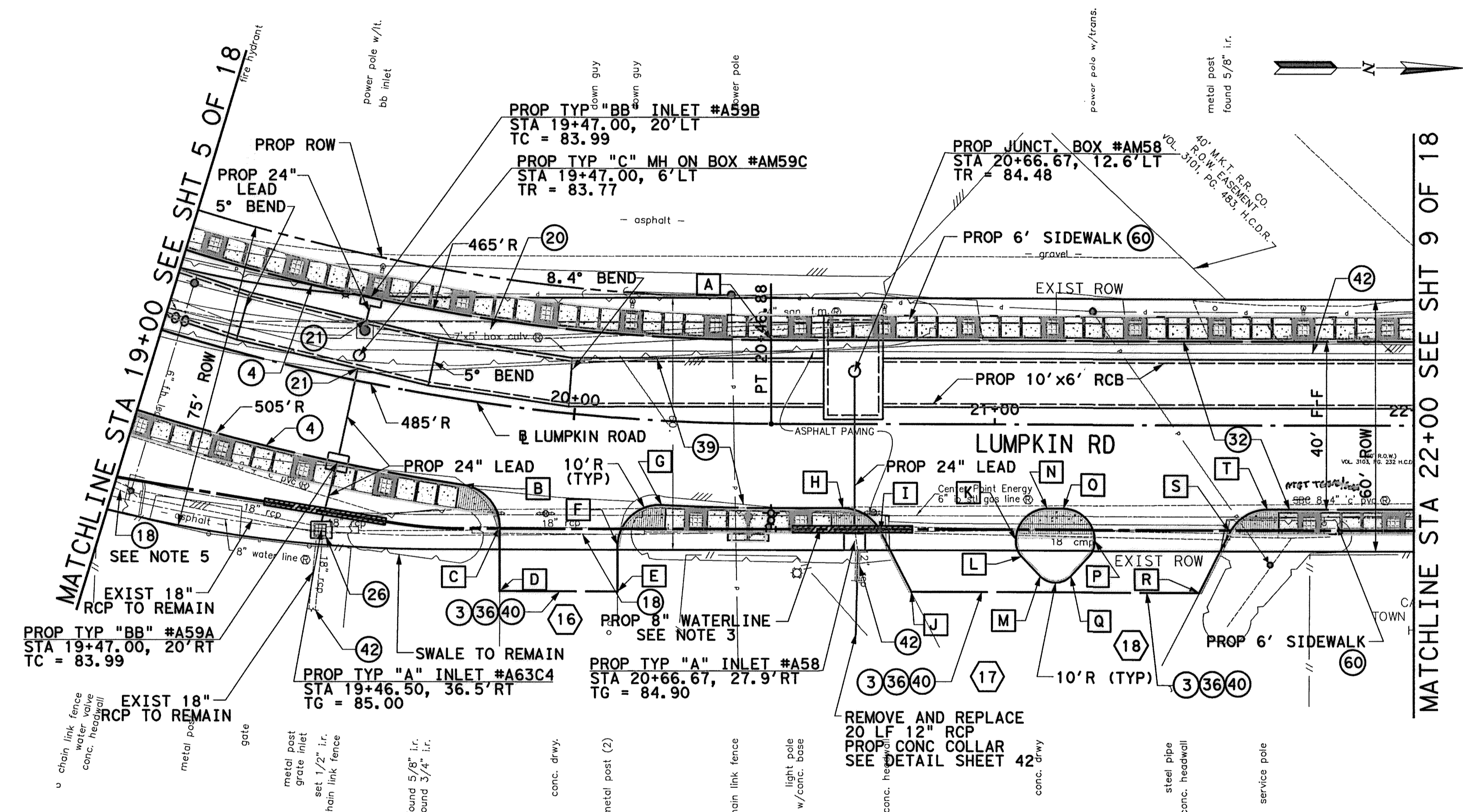
**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEQ A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
PLAN VIEW  
PVMT & STM SWR IMPROVEMENTS  
STA 19+00 TO STA 22+00  
SHEET 7 OF 18

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO. 1	FACILITY	
DRAWING SCALE:	CITY DWG. NO.	
VERT: 1"=2'		
HORIZ: 1"=20'		
SHEET:		
70 OF 226		

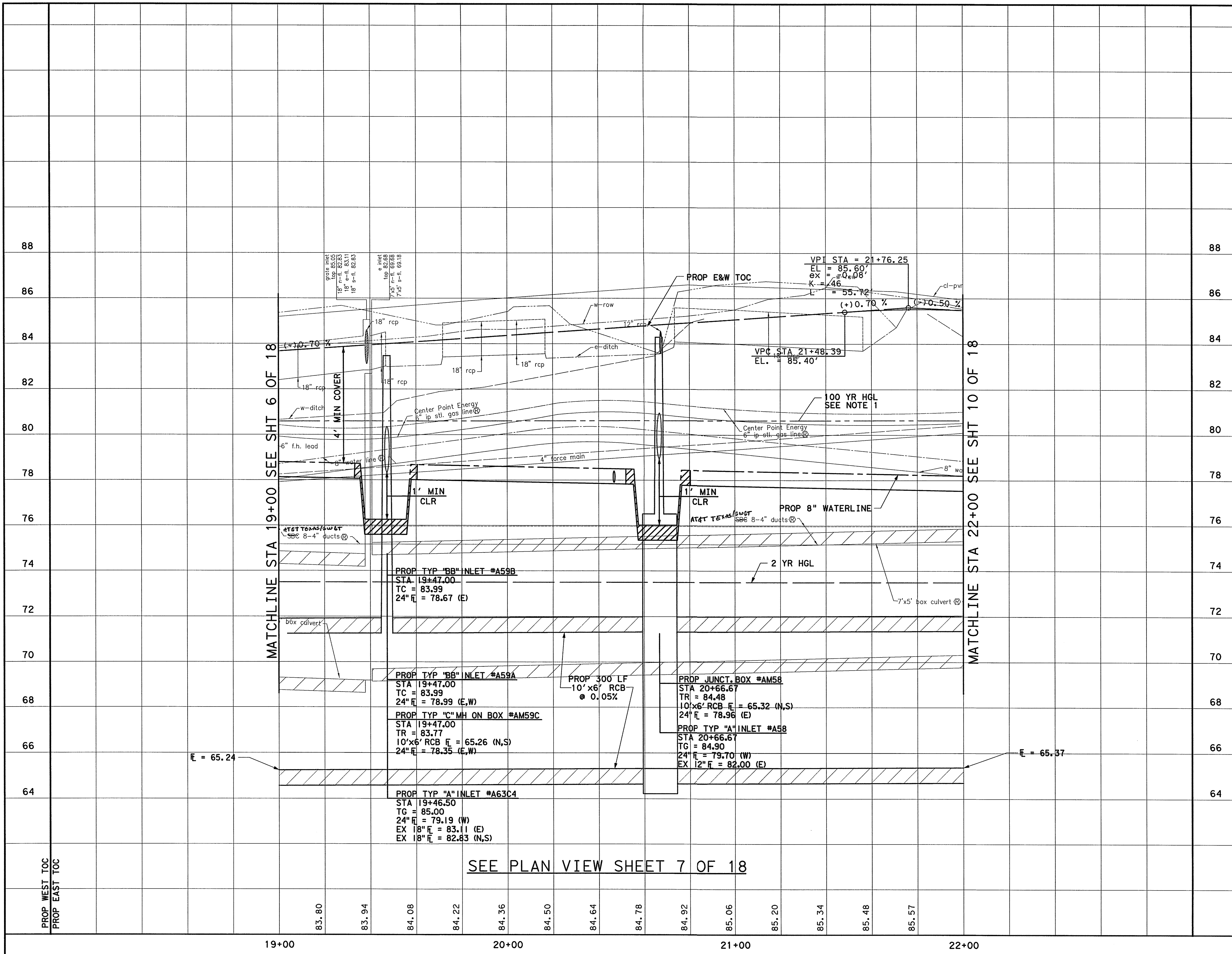


SEE PROFILE VIEW SHEET 8 OF 18

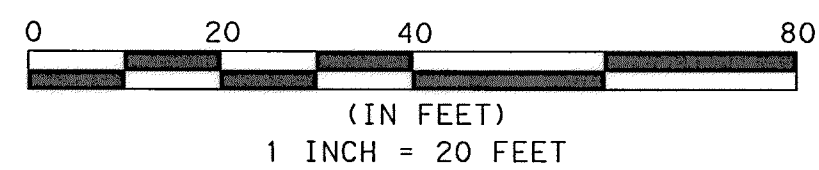
HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A	PT	20+47.07	20.00 LT
B	PRC	19+76.47	20.00 RT
C	PT	19+85.82	28.65 RT
D	PT	19+86.74	40.00 RT
E	PT	20+12.65	40.00 RT
F	PC	20+12.42	30.22 RT
G	PRC	20+21.83	20.00 RT
H	PC	20+63.88	20.00 RT
I	PT	20+72.81	25.50 RT
J	PT	20+80.10	40.00 RT
K	PC	21+05.06	27.53 RT
L	PT	21+06.42	31.44 RT
M	PC	21+10.80	36.10 RT
N	PT	21+12.56	20.00 RT
O	PC	21+16.45	20.00 RT
P	PT	21+23.95	27.47 RT
Q	PT	21+18.11	36.07 RT
R	PT	21+48.84	40.00 RT
S	PC	21+56.30	25.44 RT
T	PT	21+65.20	20.00 RT

X SEE DRIVEWAY TABULATION & DETAILS SHEET

McGuthrie 9/11/2014 9:57:35 AM 9/11/2014 9:57:35 AM P:\proj\10384-001\4-0-Product\Drawings\Roadway\61-001-1-P&P-ROW-07.dgn



**NOTES:**  
 1. PROPOSED HGL CALCULATED FOR ULTIMATE PROJECT CONDITIONS USING INFOWORKS SD.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

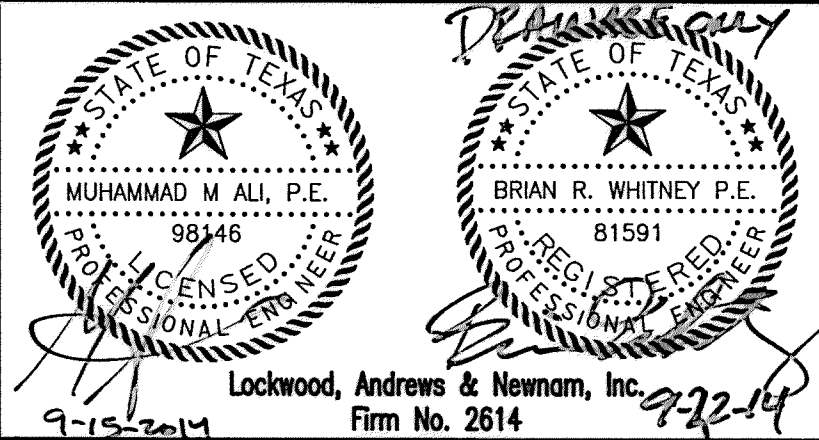
**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINE CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

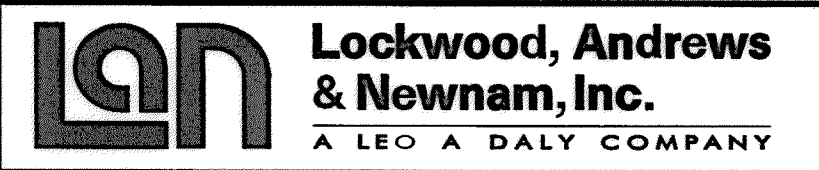
AT&T UTILITY LINES SHOWN DATE 9-25-14  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

CENTERPOINT ENERGY/NATURAL GAS DATE 10-7-14  
 FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY. DATE 10-7-14  
 (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**



**LUMPKIN ROAD N-T17000-0012-3 PROFILE VIEW**  
 PVMT & STM SWR IMPROVEMENTS  
 STA 19+00 TO STA 22+00  
 SHEET 8 OF 18

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG. NO.	
VERT: 1"=2'		
HORIZ: 1"=20'		
SHEET:		
71 OF 226		

MATCHLINE STA 19+00 SEE SHT 6 OF 18

MATCHLINE STA 22+00 SEE SHT 10 OF 18

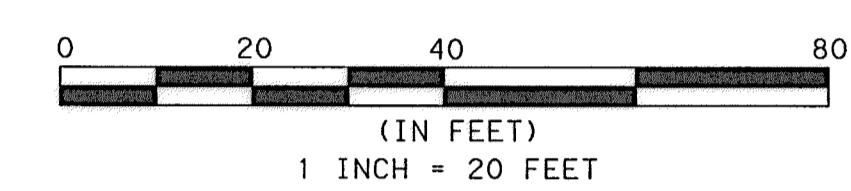
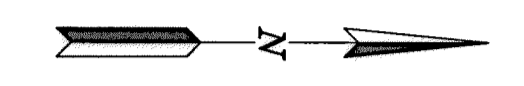
SEE PLAN VIEW SHEET 7 OF 18

APP. NO. DATE REVISIONS  
 3-24-37 PM 9/17/2014 M0authr-1e  
 pw\1\adpw.ladoc.int\projectwise\Documents\Projects\130-10384-001\4-D-Production\4-21-Drawings\Roadway\62-001-1-P&P-RDWY-08.dgn

**BENCHMARK:**  
CITY OF HOUSTON SURVEY MARKER STAMPED  
4958/7710 LOCATED AT EAST SIDE OF  
LUMPKIN RD., 110 FEET SOUTHWEST OF  
LARSTON DR. INTERSECTION IN KEYMAP 449Z  
ELEV. = 82.18 FEET (NAVD 88\GEOID09)

T. B. M. #41

SET 1/2" I.R. LOCATED NORTHEAST  
CORNER OF LUMPKIN ROAD AND  
WESTVIEW DRIVE INTERSECTION.  
D STA. 23+93.54, 31.79' RT.  
ELEV. = 85.29'



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

AT&T UTILITY LINES SHOWN DATE 9/25/14  
APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

CENTERPOINT ENERGY/NATURAL GAS DATE 10/2/14  
FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

CENTERPOINT ENERGY/UNDERGROUND DATE 10/7/14  
ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

LOCKWOOD, ANDREWS & NEWMAN, INC. FIRM NO. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY

LOCKWOOD, ANDREWS & NEWMAN, INC. A LEGAL DAILY COMPANY

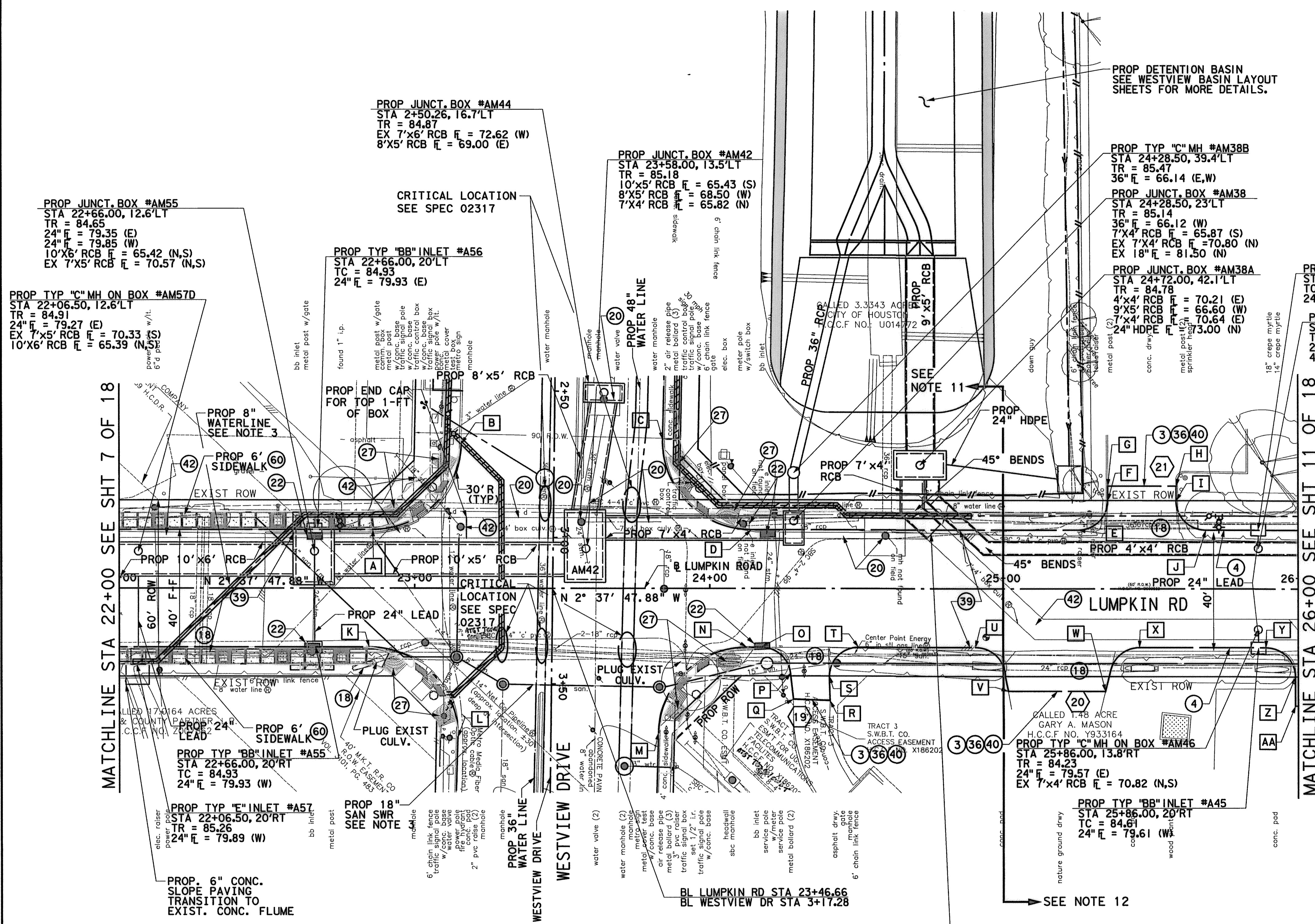
LUMPKIN ROAD N-T17000-0012-3 PLAN VIEW PVMT & STM SWR IMPROVEMENTS STA 22+00 TO STA 26+00 SHEET 9 OF 18

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER WASTEWATER TRAFFIC  
ST. & BRIDGE STORMWATER SWQ

FILE NO.: FACILITY  
DRAWING SCALE: CITY DWG NO.  
VERT: 1"=2'  
HORZ: 1"=20'  
SHEET: 72 OF 226

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A	PC	22+85.86	20.00 LT
B	PT	23+15.85	49.25 LT
C	PC	23+84.09	50.81 LT
D	PT	24+14.08	20.00 LT
E	PC	25+25.55	20.00 LT
F	PT	25+35.55	30.04 LT
G	PT	25+35.55	35.00 LT
H	PT	25+58.71	35.00 LT
I	PC	25+58.71	30.02 LT
J	PT	25+68.71	20.00 LT
K	PRC	22+84.52	20.00 RT
L	PT	23+14.51	50.85 RT
M	PC	23+82.52	49.20 RT
N	PT	24+12.51	20.00 RT
O	PC	24+17.41	20.00 RT
P	PT	24+27.35	28.86 RT
Q	PT	24+28.37	37.81 RT
R	PT	24+40.81	37.93 RT
S	PC	24+40.57	29.88 RT
T	PRC	24+50.57	20.00 RT
U	PC	24+90.67	20.00 RT
V	PT	25+00.67	35.00 RT
W	PC	25+36.24	35.00 RT
X	PT	25+46.24	20.00 RT
Y	PC	25+89.05	20.00 RT
Z	PT	25+99.04	30.01 RT
AA	PT	25+99.03	39.97 RT



SEE PROFILE VIEW SHEET 10 OF 18

**NOTES:**

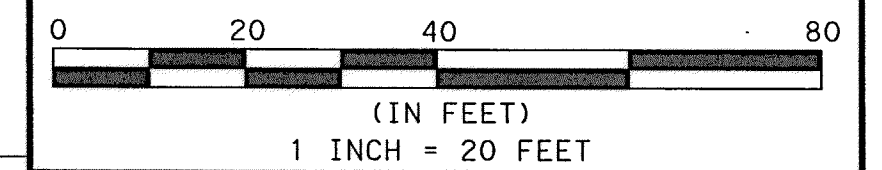
- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
- SEE STORM SEWER LATERALS SHEETS FOR MORE INFORMATION.
- SEE WATER & SAN SWR SHEETS FOR MORE INFORMATION.
- ALL EXISTING STORM SEWER TO BE REMOVED UNLESS SHOWN OTHERWISE. MAINTAIN DRAINAGE DURING CONSTRUCTION.
- SEE SIGNING & PAVEMENT MARKING SHEETS FOR MORE INFORMATION.
- SEE JUNCTION BOX DETAILS SHEETS FOR MORE INFORMATION.
- SEE WESTVIEW PLAN & PROFILE SHEETS FOR MORE INFORMATION.
- ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
- CONTRACTOR SHALL BRACE AND SUPPORT ALL BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
- SEE TOE WALL DETAILS SHEET FOR PROPOSED TOE WALL LOCATIONS AND DETAILS.
- STATION 25+00: END PROPOSED BASE BID ITEMS (SEE SPECIFICATION 01110 FOR DETAILS).
- STATION 25+00: BEGIN PROPOSED ALTERNATE BID ITEMS (SEE SPECIFICATION 01110 FOR DETAILS).

SEE DRIVEWAY TABULATION & DETAILS SHEET



No.	DATE	REVISIONS

NOTES:  
 1. PROPOSED HGL CALCULATED FOR ULTIMATE PROJECT CONDITIONS USING INFOWORKS SD.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

NOTICE:  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

*Lowndes* 9/25/14 DATE APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*Shimmer* 10/7/14 DATE APPROVED FOR CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY. SIGNATURE VALID FOR SIX MONTHS.

*Shimmer* 10/7/14 DATE APPROVED FOR CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY. SIGNATURE VALID FOR SIX MONTHS.

LOCKWOOD, ANDREWS & NEWMAN, INC.  
 Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY

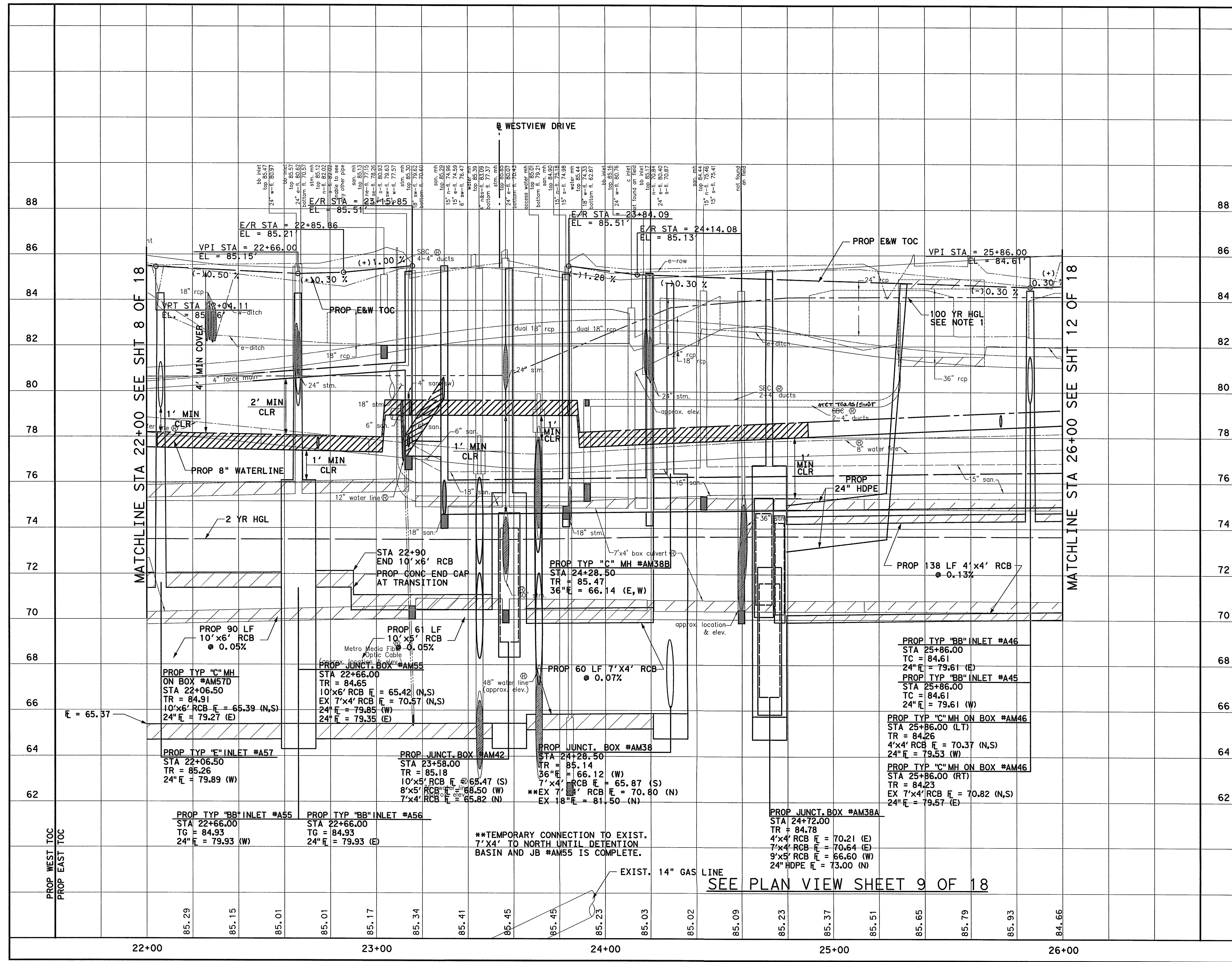
LUMPKIN ROAD  
 N-T17000-0012-3  
 PROFILE VIEW  
 PVMT & STM SWR IMPROVEMENTS  
 STA 22+00 TO END OF PROJECT  
 SHEET 10 OF 18

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

FILE NO.:	FACILITY

DRAWING SCALE:	CITY DWG NO.

SHEET:	73 OF 226



\*\*TEMPORARY CONNECTION TO EXIST. 7'x4' TO NORTH UNTIL DETENTION BASIN AND JB #AM55 IS COMPLETE.

EXIST. 14" GAS LINE  
 SEE PLAN VIEW SHEET 9 OF 18

MATCHLINE STA 22+00 SEE SHT 8 OF 18

MATCHLINE STA 26+00 SEE SHT 12 OF 18

pw \\\ ledpw. ladoop. int\proj\130-10384-001\4-0-Production\4-01-Drawings\Roadway\64-001-P&P-RDWAY-10.dgn 9/17/2014 3:24:45 PM MUGuthrie

**NOTES:**

- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
- SEE STORM SEWER LATERALS SHEETS FOR MORE INFORMATION.
- SEE WATER & SAN SWR SHEETS FOR MORE INFORMATION.
- PROPOSED HGL CALCULATED FOR POST-PROJECT CONDITIONS USING INFOWORKS SD.
- ALL EXISTING STORM SEWER TO BE REMOVED UNLESS SHOWN OTHERWISE. MAINTAIN DRAINAGE DURING CONSTRUCTION.
- SEE SIGNING & PAVEMENT MARKING SHEETS FOR INFORMATION.

- SEE JUNCTION BOX DETAILS SHEETS FOR MORE INFORMATION.
- ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
- CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.

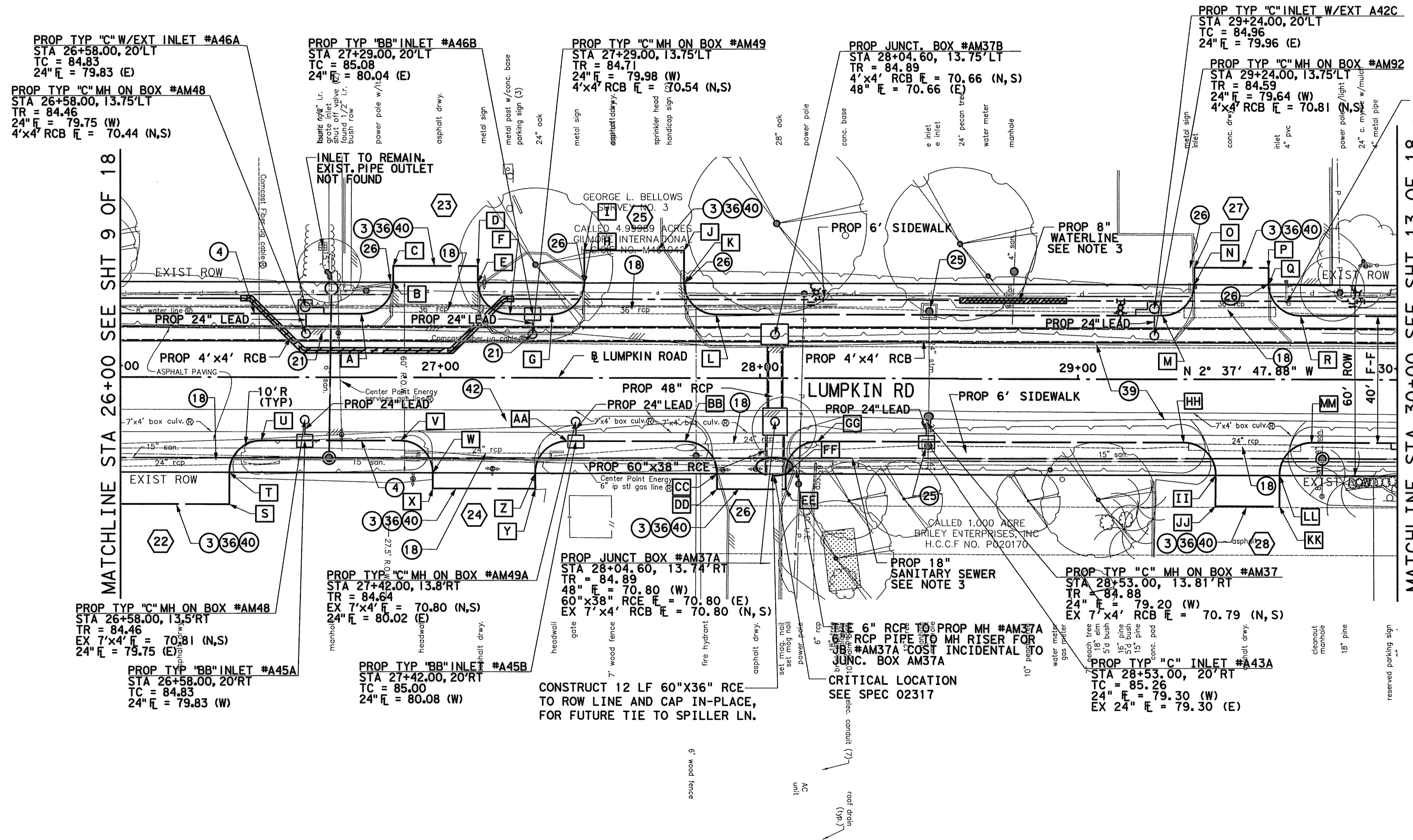
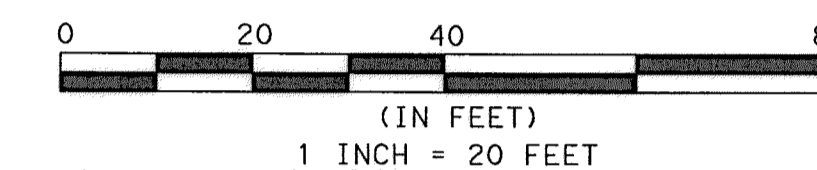
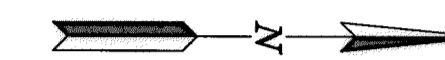
**BENCHMARK:**

CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEOID09)

T.B.M. #40

SET MAG NAIL LOCATED EAST SIDE OF LUMPKIN ROAD, APPROX. 418 FT NORTH OF LUMPKIN ROAD AND WESTVIEW DRIVE INTERSECTION. D STA. 28+08.56, 18.18' RT. ELEV.=86.39'

No.	DATE	REVISIONS



MATCHLINE STA 30+00 SEE SHT 13 OF 18

MATCHLINE STA 26+00 SEE SHT 9 OF 18

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A	PC	26+75.27	20.00 LT
B	PT	26+85.27	29.92 LT
C	PT	26+85.27	35.00 LT
D	PT	27+11.72	35.00 LT
E	PC	27+11.72	29.89 LT
F	PT	27+21.72	20.00 LT
G	PC	27+34.98	20.00 LT
H	PT	27+44.98	29.87 LT
I	PT	27+44.98	40.00 LT
J	PT	27+76.24	40.00 LT
K	PC	27+76.23	29.84 LT
L	PT	27+86.23	20.00 LT
M	PC	29+26.55	20.00 LT
N	PT	29+36.55	29.70 LT
O	PT	29+36.56	35.01 LT
P	PT	29+59.78	34.98 LT
Q	PC	29+59.78	29.68 LT
R	PT	29+69.77	20.00 LT
S	PT	26+34.03	40.03 RT
T	PC	26+34.05	30.04 RT
U	PT	26+44.05	20.00 RT
V	PC	26+87.61	20.00 RT
W	PT	26+97.61	30.09 RT
X	PT	26+97.61	35.00 RT
Y	PT	27+29.58	35.00 RT
Z	PC	27+29.58	30.12 RT
AA	PT	27+39.58	20.00 RT
BB	PC	27+76.54	20.00 RT
CC	PT	27+86.54	30.17 RT
DD	PT	27+86.54	35.00 RT
EE	PT	28+08.03	35.00 RT
FF	PC	28+08.04	30.19 RT
GG	PT	28+18.03	20.00 RT
HH	PC	29+33.11	20.00 RT
II	PT	29+43.11	30.30 RT
JJ	PT	29+43.08	39.96 RT
KK	PT	29+63.09	40.03 RT
LL	PC	29+63.12	30.32 RT
MM	PT	29+73.11	20.00 RT

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

AT&T UTILITY LINES SHOWN	DATE
Center Point Energy	9-25-14
Center Point Energy/Natural Gas	10/2/14
Center Point Energy/Underground Electrical Facilities Verification Only	10/2/14

MUHAMMAD M. ALI, P.E.  
81591

BRIAN R. WHITNEY, P.E.  
81591

Lockwood, Andrews & Newnam, Inc. 9-12-14  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**LUMPKIN ROAD**  
N-T17000-0012-3  
PLAN VIEW  
PVMT & STM SWR IMPROVEMENTS  
STA 26+00 TO STA 30+00  
SHEET 11 OF 18

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

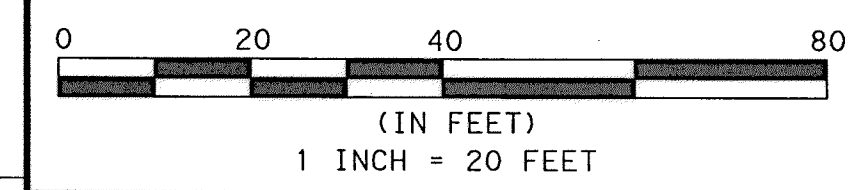
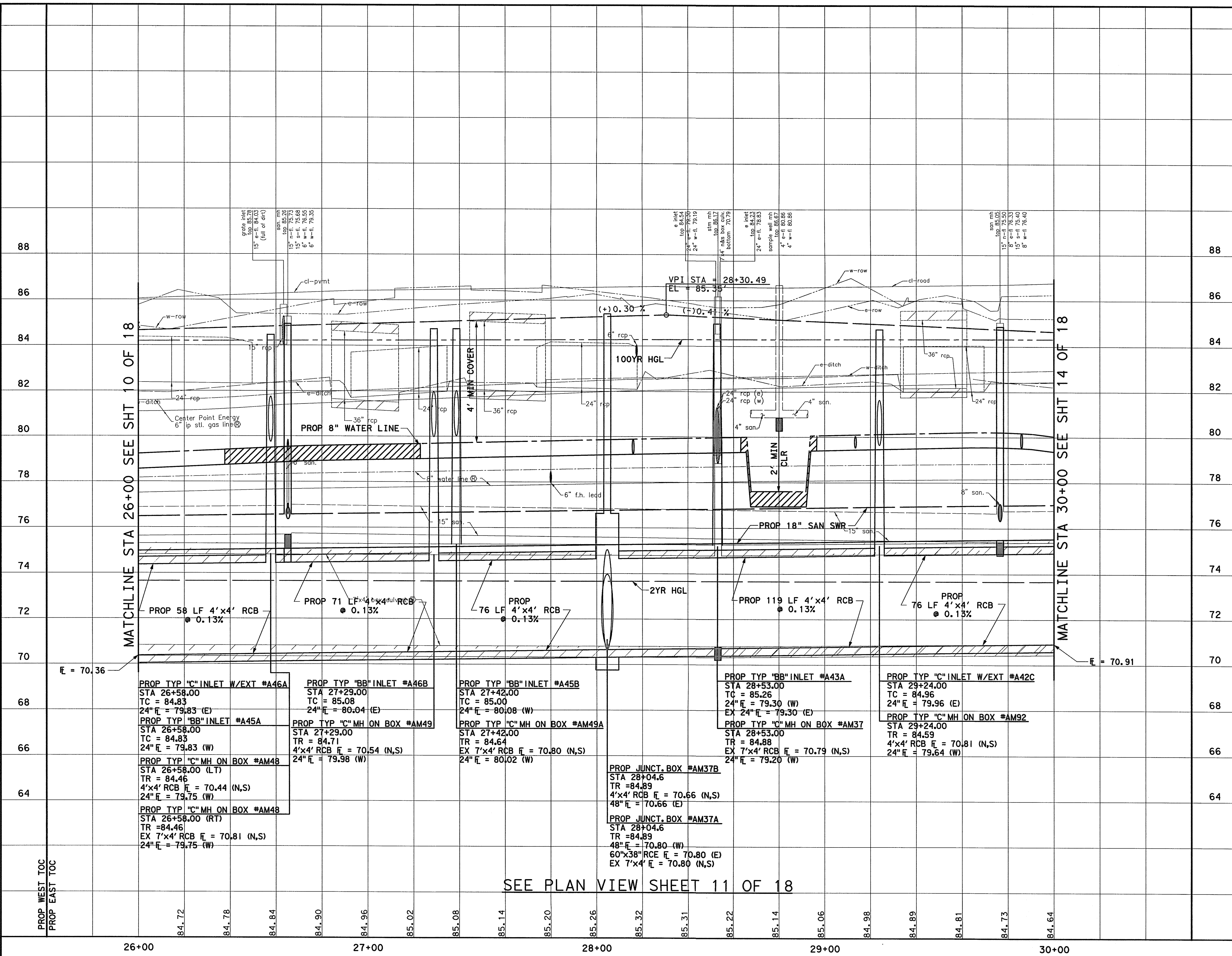
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG. NO.	
VERT: 1"=2'	HORIZ: 1"=20'	
SHEET:	74 OF 226	

SEE PROFILE VIEW SHEET 12 OF 18

(X) SEE DRIVEWAY TABULATION & DETAILS SHEET

9/11/2014 9:58:15 AM \\pww\ladpw.ladbo.1ntr\projects\Documents\Projects\130-10384-001\4-0-Production\Roadway\4-01-Drwg\10384-001-11.dgn

No.	DATE	REVISIONS



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINE CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

*[Signature]* 9/25/18 DATE  
AT&N UTILITY LINES SHOWN APPROVED FOR AT&N/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*[Signature]* 10/2/14 DATE  
CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*[Signature]* 10/7/14 DATE  
CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

MUHAMMAD M. ALI, P.E.  
98146  
LICENSED PROFESSIONAL ENGINEER  
STATE OF TEXAS

BRIAN R. WHITNEY, P.E.  
81591  
LICENSED PROFESSIONAL ENGINEER  
STATE OF TEXAS

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614  
9-15-2014

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

LUMPKIN ROAD  
N-T17000-0012-3  
PROFILE VIEW  
STA 26+00 TO STA 30+00  
SHEET 12 OF 18

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'		
HORZ: 1"=20'		
SHEET:	75 OF 226	

SEE PLAN VIEW SHEET 11 OF 18

9/17/2014 9:24:53 PM M:\Guthrie\130-10384-001\4-01-Drawings\Roadway\66-001-P&P-RDWY-12.dgn

**NOTES:**

1. ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
2. SEE STORM SEWER LATERALS SHEETS FOR MORE INFORMATION.
3. SEE WATER & SAN SWR SHEETS FOR MORE INFORMATION.
4. PROPOSED HGL CALCULATED FOR POST-PROJECT CONDITIONS USING INFOWORKS SD.
5. ALL EXISTING STORM SEWER TO BE REMOVED UNLESS SHOWN OTHERWISE. MAINTAIN DRAINAGE DURING CONSTRUCTION.
6. CONTRACTOR TO FIELD LOCATE EXIST. 24" RCP PRIOR TO CONSTRUCTION OF MANHOLE/INLET.

7. SEE SIGNING & PAVEMENT MARKING SHEETS FOR MORE INFORMATION.
8. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
9. CONTRACTOR SHALL BRACE AND SUPPORT ALL BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.

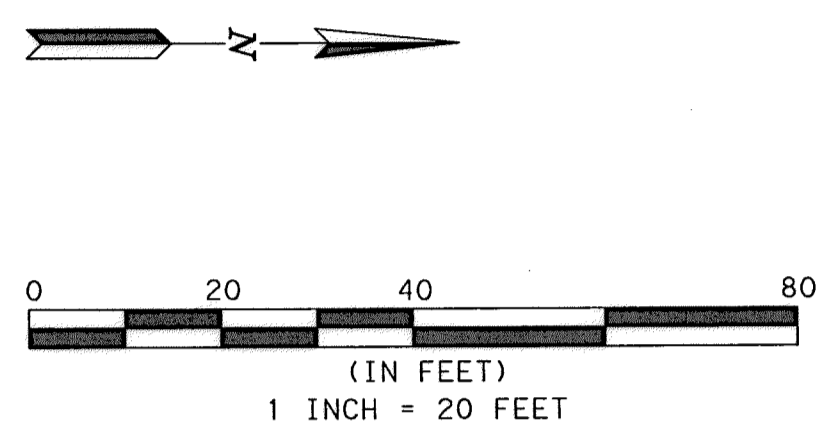
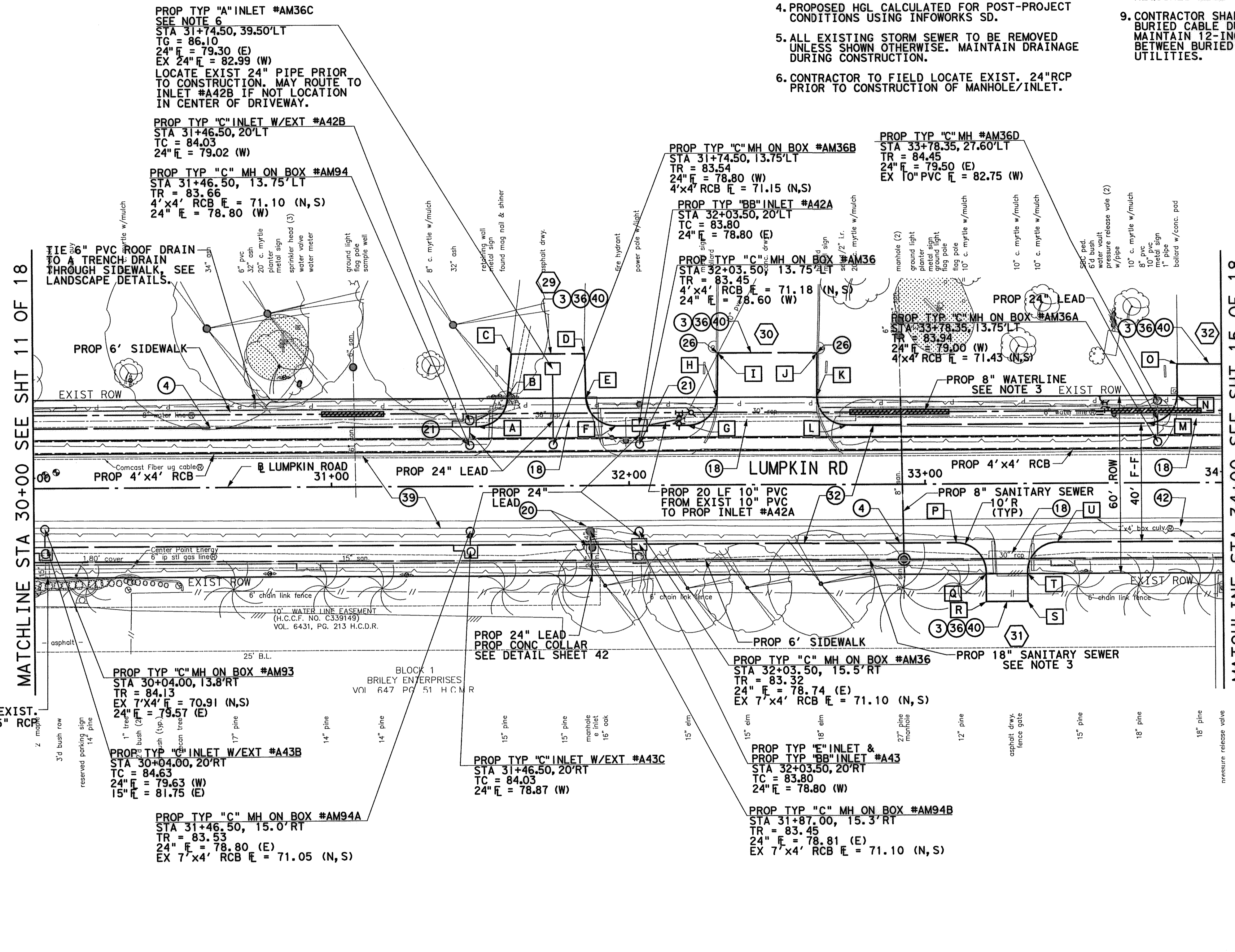
**BENCHMARK:**

CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV. = 82.18 FEET (NAVD 88 GEOID09)

T. B. M. #52

SET 1/2" I.R. LOCATED WEST SIDE OF LUMPKIN ROAD, APPROX. 466 FT NORTH OF LUMPKIN ROAD AND NORTHBROOK DRIVE INTERSECTION. D STA. 32+76.49, 11.77' LT. ELEV. = 86.60'

NO.	DATE	REVISIONS	APP.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

*Signature* 9-25-14 DATE 9/11/2014

AT&T UTILITY LINES SHOWN DATE 10/2/14

CENTERPOINT ENERGY/NATURAL GAS DATE 10/7/14

CENTERPOINT ENERGY/UNDERGROUND DATE 10/7/14

MUHAMMAD M. ALI, P.E.  
81591

BRIAN R. WHITNEY, P.E.  
81591

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A	PC	31+49.06	20.00 LT
B	PT	31+59.05	29.52 LT
C	PT	31+58.94	45.00 LT
D	PT	31+85.65	45.00 LT
E	PC	31+85.76	29.49 LT
F	PT	31+95.75	20.00 LT
G	PC	32+19.90	20.00 LT
H	PT	32+29.88	29.46 LT
I	PT	32+29.76	45.00 LT
J	PT	32+63.71	45.00 LT
K	PC	32+63.83	29.43 LT
L	PT	32+73.81	20.00 LT
M	PC	33+75.00	20.00 LT
N	PT	33+84.98	29.33 LT
O	PT	33+85.00	40.03 LT
P	PC	33+10.37	20.00 RT
Q	PT	33+20.35	30.62 RT
R	PT	33+20.35	40.00 RT
S	PT	33+34.39	40.00 RT
T	PC	33+34.39	30.63 RT
U	PT	33+44.37	20.00 RT

SEE PROFILE VIEW SHEET 14 OF 18

(X) SEE DRIVEWAY TABULATION & DETAILS SHEET

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

**LUMPKIN ROAD  
N-T17000-0012-3  
PLAN VIEW  
PVMT & STM SWR IMPROVEMENTS  
STA 30+00 TO STA 34+00  
SHEET 13 OF 18**

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

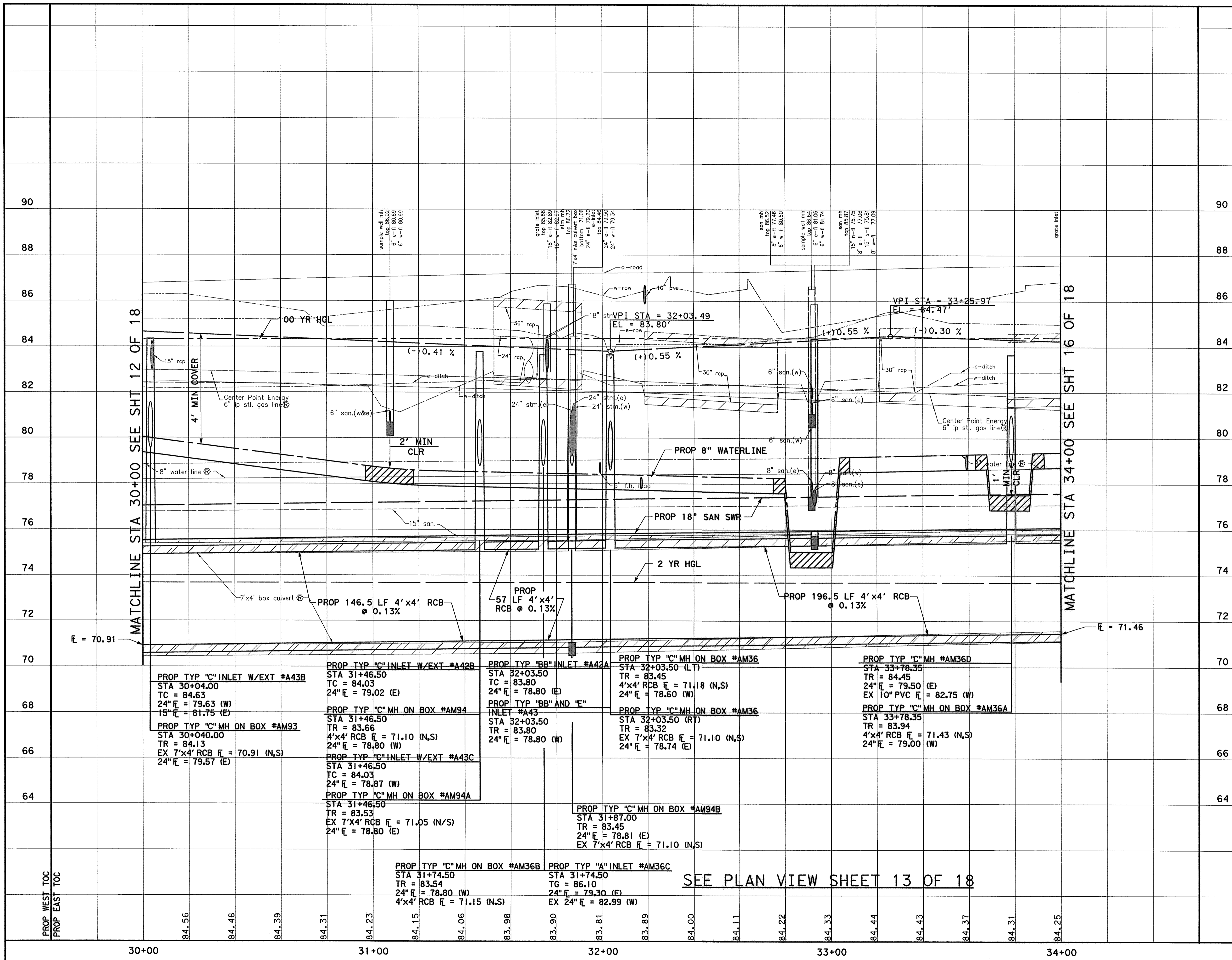
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

FILE NO. 1

DRAWING SCALE: CITY DWG NO.

VERT: 1"=2'  
HORZ: 1"=20'

SHEET: 76 OF 226



APP.
REVISIONS
No.
DATE

0 20 40 80  
(IN FEET)  
1 INCH = 20 FEET

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

*[Signature]* 9/25/14  
DATE 10/7/14  
AT&T UTILITY LINES SHOWN APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*[Signature]* 10/7/14  
DATE 10/7/14  
CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*[Signature]* 10/7/14  
DATE 10/7/14  
CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEQ A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
PROFILE VIEW  
PVMT & STM SWR IMPROVEMENTS  
STA 30+00 TO STA 34+00  
SHEET 14 OF 18

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO. : FACILITY

DRAWING SCALE: CITY DWG. NO.

VERT: 1"=2'  
HORZ: 1"=20'

SHEET: 77 OF 226

SEE PLAN VIEW SHEET 13 OF 18

pw\l\ladpw.ladoc.mnt\project\150-10284-001\4-0-P-Product\on\4-01-Dr\Drawings\Roadway\68-001-1-P&P-RDWY-14.dgn 9/17/2014 3:25:01 PM MJDuth-r-10

**NOTES:**

1. ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
2. SEE STORM SEWER LATERALS SHEETS FOR MORE INFORMATION.
3. SEE WATER & SAN SWR SHEETS FOR MORE INFORMATION.
4. PROPOSED HGL CALCULATED FOR POST-PROJECT CONDITIONS USING INFOWORKS SD.
5. ALL EXISTING STORM SEWER TO BE REMOVED UNLESS SHOWN OTHERWISE. MAINTAIN DRAINAGE DURING CONSTRUCTION.

6. SEE SIGNING & PAVEMENT MARKING SHEETS FOR MORE INFORMATION.
7. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
8. CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.

**BENCHMARK:**

CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEOID09)

T. B. M. #53

SET "X" LOCATED NORTH SIDE OF LUMPKIN ROAD AND NORTHBROOK DRIVE INTERSECTION. D STA. 37+59.36, 0.22' RT. ELEV.=85.72'

NO.	DATE	REVISIONS

REMOVE EXISTING INLET  
 PROP TYP "A" INLET #A42D  
 STA 34+40.50, 46.13' LT  
 TG = 86.03  
 24" E = 79.38 (E)  
 EX 15" E = 83.32 (N)  
 EX 8" E = 83.27 (S)

PROP TYP "C" MH ON BOX #AM47A  
 STA 34+41.75, 13.75' LT  
 TR = 83.69  
 4'x4' RCB E = 71.53 (N, S)  
 24" E = 78.78 (W)

PROP TYP "BB" INLET #A42  
 STA 34+74.79, 20' RT  
 TR = 84.03  
 24" E = 79.03 (E)

PROP JUNCT. BOX #AM35  
 STA 37+32.00, 11.09' LT  
 TR = 86.20  
 4'x4' RCB E = 71.90 (S)  
 EX 42" E = 72.69 (E/W)  
 (CUT AND TIE 42", MATCH EXIST)

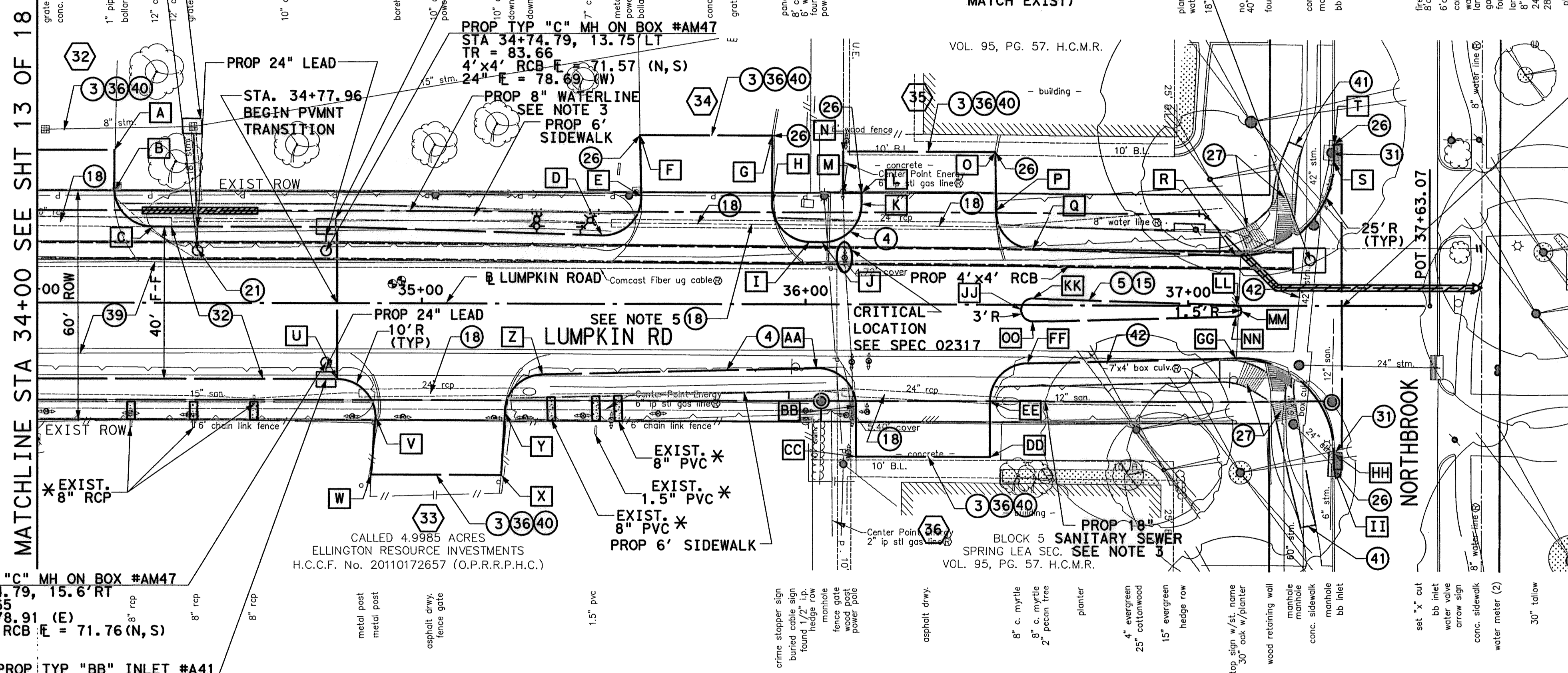
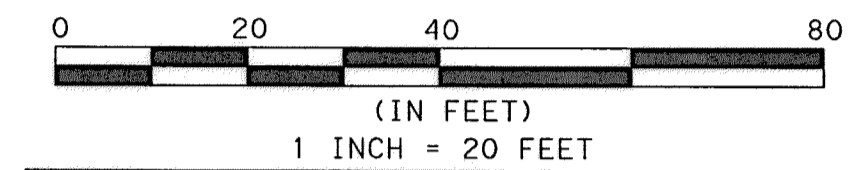
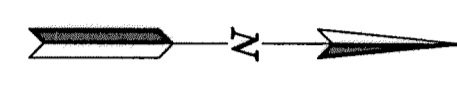
PROP TYP "C" MH ON BOX #AM47  
 STA 34+74.79, 13.75' LT  
 TR = 83.66  
 4'x4' RCB E = 71.57 (N, S)  
 24" E = 78.69 (W)

PROP 8" WATERLINE  
 SEE NOTE 3  
 PROP 6' SIDEWALK

PROP 24" LEAD  
 STA. 34+77.96  
 BEGIN PVMT TRANSITION

STA 37+40.16  
 END 3 35  
 MATCH EXIST

MATCHLINE STA 34+00 SEE SHT 13 OF 18



HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A	PT	34+20.04	39.97 LT
B	PC	34+20.02	29.30 LT
C	PT	34+29.99	20.00 LT
D	PC	35+46.79	17.99 LT
E	PT	35+57.08	28.18 LT
F	PT	35+57.09	40.01 LT
G	PT	35+91.30	39.99 LT
H	PC	35+91.29	26.45 LT
I	PT	36+01.00	16.40 LT
J	PC	36+04.26	16.30 LT
K	PT	36+14.55	26.29 LT
L	PT	36+14.55	29.13 LT
M	PT	36+09.79	29.14 LT
N	PT	36+09.81	40.02 LT
O	PT	36+49.56	39.99 LT
P	PC	36+49.55	24.70 LT
Q	PT	36+59.25	14.70 LT
R	PC	37+12.43	13.14 LT
S	PT	37+38.16	37.79 LT
T	PT	37+38.15	42.27 LT
U	PC	34+77.97	20.00 RT
V	PT	34+87.97	30.00 RT
W	PT	34+87.95	45.00 RT
X	PT	35+21.65	45.00 RT
Y	PC	35+21.59	28.67 RT
Z	PT	35+31.34	18.63 RT
AA	PC	36+02.82	16.81 RT
BB	PT	36+13.07	26.77 RT
CC	PT	36+13.06	40.00 RT
DD	PT	36+48.06	40.00 RT
EE	PC	36+48.07	25.43 RT
FF	PT	36+57.81	15.40 RT
GG	PC	37+12.48	13.86 RT
HH	PT	37+38.18	38.84 RT
II	PT	37+38.18	42.99 RT
JJ	PC	36+56.20	1.30 RT
KK	PT	36+59.20	1.69 LT
LL	PC	37+12.58	0.13 LT
MM	PC	37+13.90	1.41 RT
NN	PT	37+12.48	2.86 RT
OO	PT	36+59.27	4.35 RT

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

NOTICE: FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

AT&T/UTILITY LINES SHOWN DATE 9-25-14  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

CENTERPOINT ENERGY/NATURAL GAS DATE 10/2/14  
 FACILITIES VERIFICATION ONLY  
 (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

CENTERPOINT ENERGY/UNDERGROUND DATE 10/2/14  
 ELECTRICAL FACILITIES VERIFICATION ONLY  
 (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

LUMPKIN ROAD  
 N-T17000-0012-3  
 PLAN VIEW  
 PVMT & STM SWR IMPROVEMENTS  
 STA 34+00 TO END PROJECT  
 SHEET 15 OF 18

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

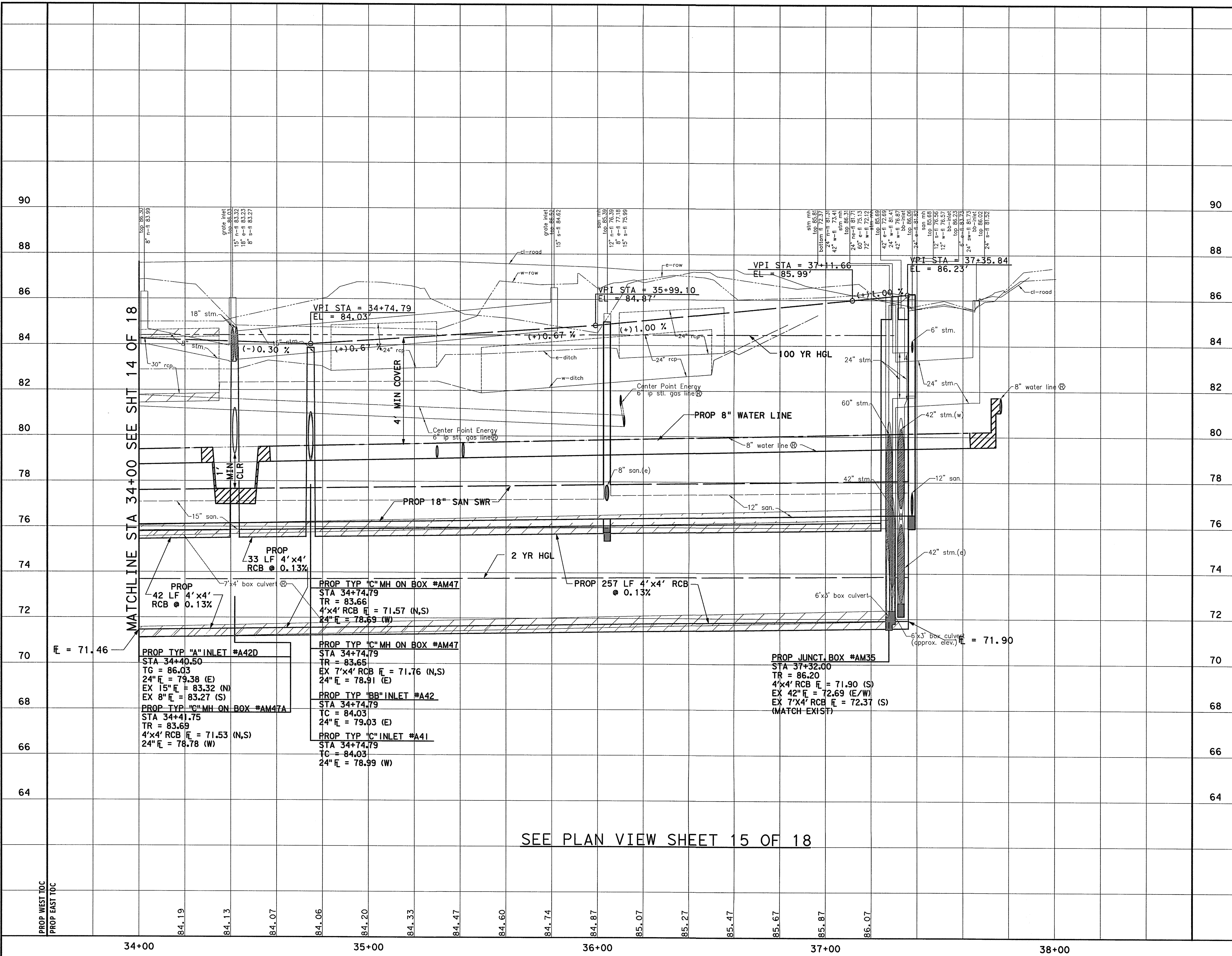
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'	HORIZ: 1"=20'	
SHEET:	78 OF 226	

\* AT LOCATIONS INDICATED INSTALL CONC. CHANNEL THROUGH SIDEWALK WITH GRATE TOP AS PER LANDSCAPING DETAILS. PROP 2'-FT WIDE 5" THICK CONC. SLOPE PAVING FLUME FROM ROW/ EXISTING PIPE FLOWLINE TO PROP CONC. CHANNEL FLOWLINE AS PER SIDEWALK TRENCH DETAILS. V-CHANNEL FOR FLUME TO MATCH FLOWLINE OF EXISTING PIPE AT ROW AND TO MATCH PROP SIDEWALK TRENCH. MATCH SIDES OF FLUME TO PROPOSED SLOPE FROM SIDEWALK TO ROW IN GRASS AREAS PER TYPICAL CROSS-SECTIONS.

SEE PROFILE VIEW SHEET 16 OF 18

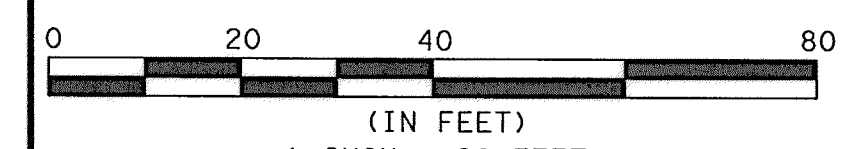
X SEE DRIVEWAY TABULATION & DETAILS SHEET

No.	DATE	REVISIONS



MATCHLINE STA 34+00 SEE SHT 14 OF 18

SEE PLAN VIEW SHEET 15 OF 18



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

*[Signature]* 9-25-14  
DATE  
AT&T UTILITY LINES SHOWN  
APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*[Signature]* 10/7/14  
DATE  
CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY  
(THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*[Signature]* 10/7/14  
DATE  
CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY.  
(THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

MUHAMMAD M. ALI, P.E.  
88146  
LICENSED PROFESSIONAL ENGINEER  
STATE OF TEXAS

BRIAN R. WHITNEY, P.E.  
81591  
LICENSED PROFESSIONAL ENGINEER  
STATE OF TEXAS

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614  
9-22-14

MEMORIAL CITY REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
PROFILE VIEW  
PVMT & STM SWR IMPROVEMENTS  
STA 34+00 TO END PROJECT  
SHEET 16 OF 18  
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'		
HORIZ: 1"=20'		
SHEET:		
	79 OF 226	

pw \\ \ladpw. laddoc. intri.projectwise\Documents\Projects\130-10384-001\4-B-Drawings\Roadway\70-001-P&P-RDWY-16.dgn 9/17/2014 3:25:10 PM MUGuthrie

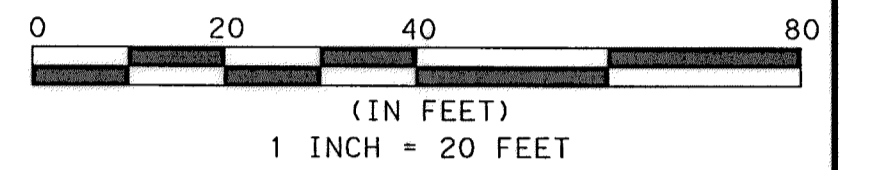
T. B. M. #48

SET "X" LOCATED CENTERLINE OF WESTVIEW DRIVE. APPROX. 175 FT WEST OF LUMPKIN DRIVE AND WESTVIEW DRIVE INTERSECTION. D STA. 37+59.36, 0.22' RT. ELEV. =85.53'

BENCHMARK:

CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV. =82.18 FEET (NAVD 88\GEOID09)

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A	PT	1+41.48	38.16 LT
B	PC	2+65.97	36.76 LT
C	PT	3+65.99	36.53 LT
D	PT	4+70.95	35.12 LT
E	PT	1+40.95	30.25 RT
F	PC	2+68.46	31.48 RT
G	PC	3+68.56	31.45 RT
H	PT	4+70.95	33.13 RT



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

NOTICE: FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

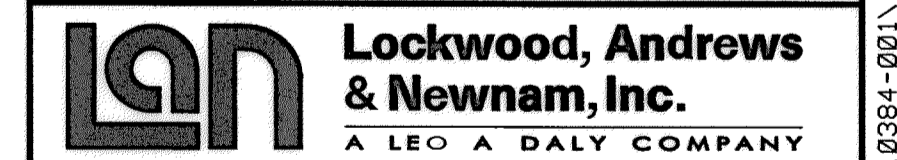
AT&T UTILITY LINES SHOWN DATE 9/25/17  
APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

CENTERPOINT ENERGY/NATURAL GAS DATE 10/2/14  
FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

CENTERPOINT ENERGY/UNDERGROUND DATE 10/2/14  
ELECTRICAL FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

Lockwood, Andrews & Newnam, Inc. Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY



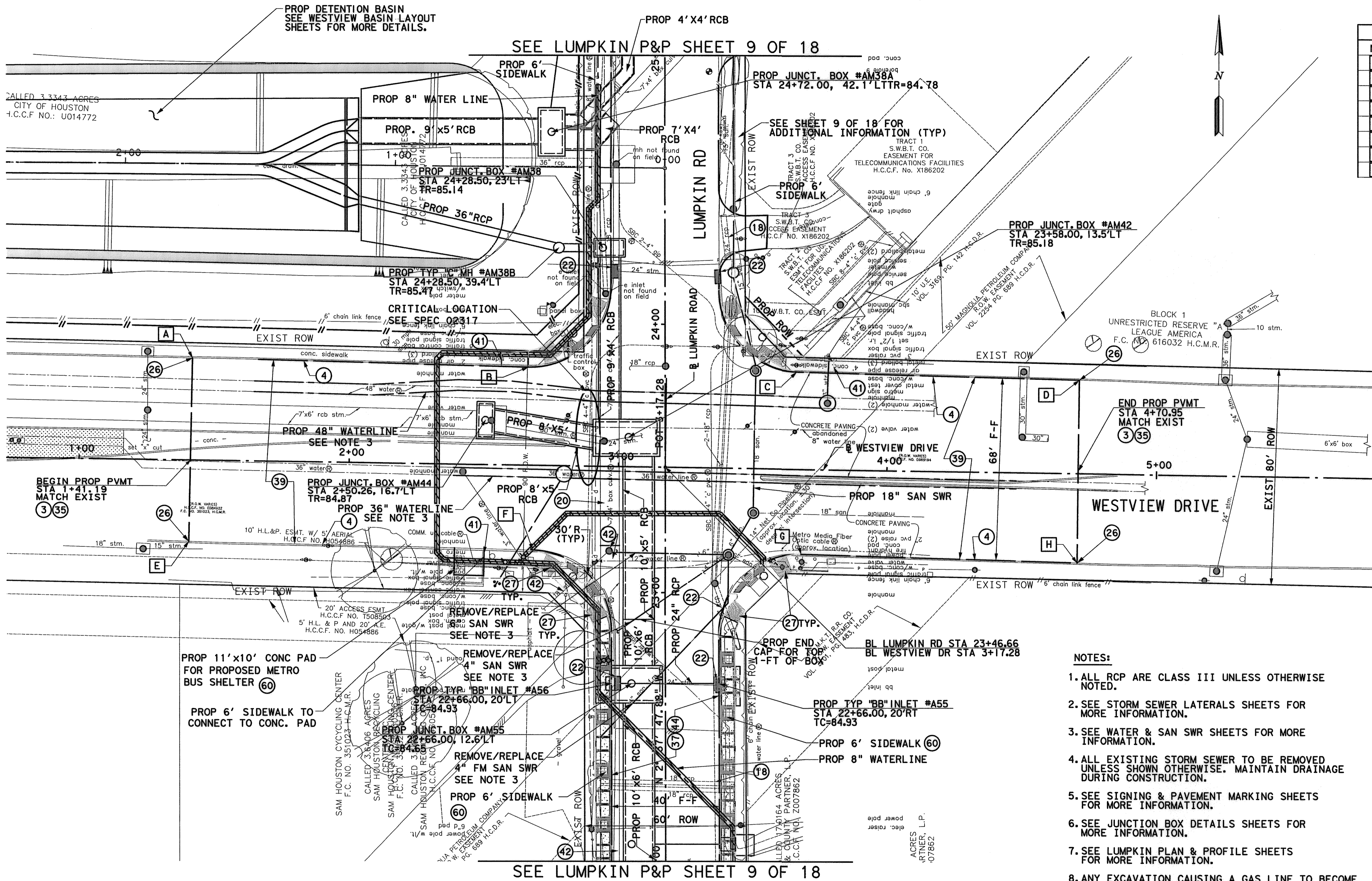
WESTVIEW DRIVE N-T17000-0012-3 PLAN VIEW PVMT & STM SWR IMPROVEMENTS STA 1+00 TO STA 5+00 SHEET 17 OF 18

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DNG NO.	
VERT: 1"=2'	SHEET: 80 OF 226	
HORZ: 1"=20'		

NOTES:

- ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
- SEE STORM SEWER LATERALS SHEETS FOR MORE INFORMATION.
- SEE WATER & SAN SWR SHEETS FOR MORE INFORMATION.
- ALL EXISTING STORM SEWER TO BE REMOVED UNLESS SHOWN OTHERWISE. MAINTAIN DRAINAGE DURING CONSTRUCTION.
- SEE SIGNING & PAVEMENT MARKING SHEETS FOR MORE INFORMATION.
- SEE JUNCTION BOX DETAILS SHEETS FOR MORE INFORMATION.
- SEE LUMPKIN PLAN & PROFILE SHEETS FOR MORE INFORMATION.
- ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
- CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.



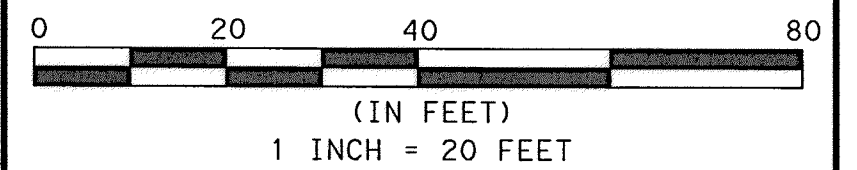
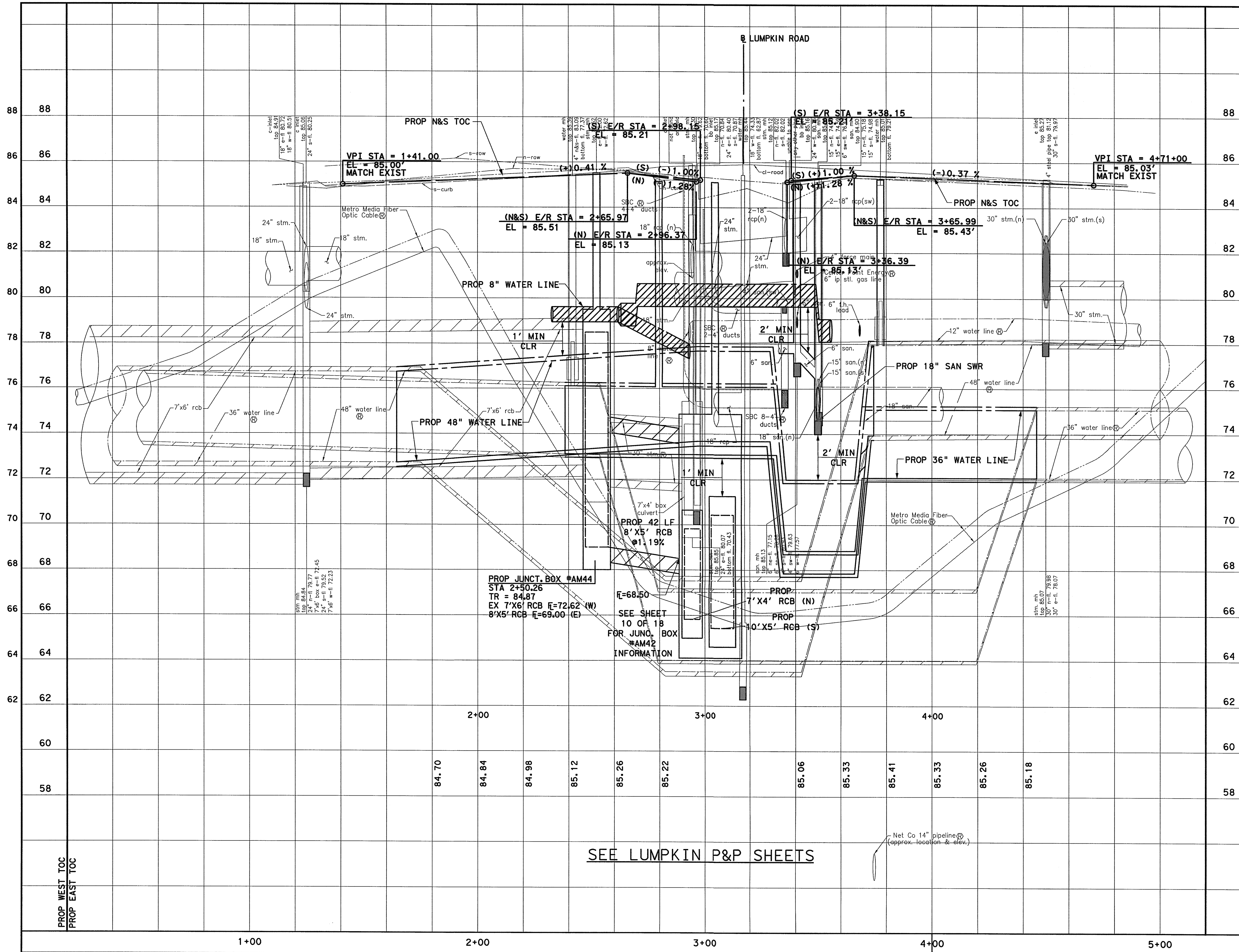
SEE LUMPKIN P&P SHEET 9 OF 18

SEE LUMPKIN P&P SHEET 9 OF 18

X SEE DRIVEWAY TABULATION & DETAILS SHEET

Vertical text on the right edge of the drawing, including 'MUGuthrie' and '9/11/2014'.





TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

NOTICE: FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

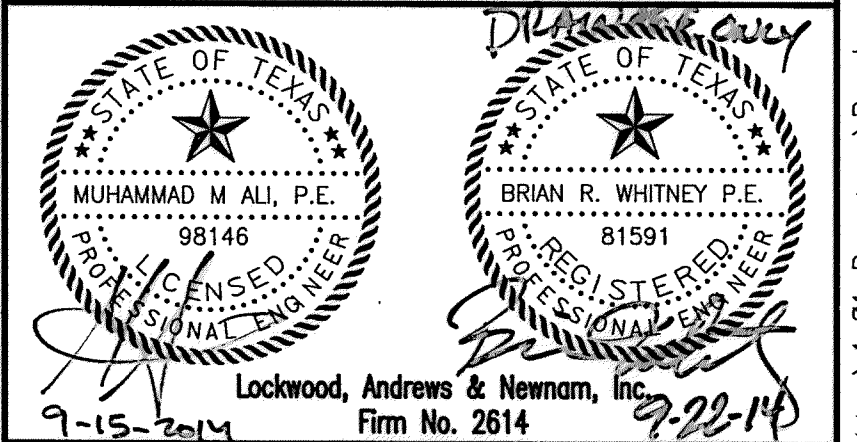
**PRIVATE UTILITY LINES SHOWN**

AT&T UTILITY LINES SHOWN DATE 9-25-14  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

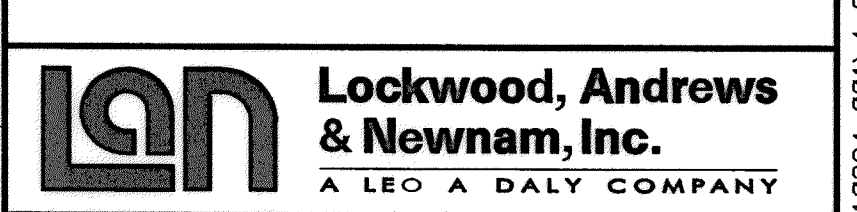
CENTERPOINT ENERGY/NATURAL GAS DATE 10/7/14  
 FACILITIES VERIFICATION ONLY  
 (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

CENTERPOINT ENERGY/UNDERGROUND DATE 10/7/14  
 ELECTRICAL FACILITIES VERIFICATION ONLY  
 (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**



WESTVIEW DRIVE  
 N-T17000-0012-3  
 PROFILE VIEW  
 PVMT & STM SWR IMPROVEMENTS  
 STA 1+00 TO STA 5+00  
 SHEET 18 OF 18

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG NO.
VERT: 1"=2'		
HORZ: 1"=20'		
SHEET:		
		81 OF 226

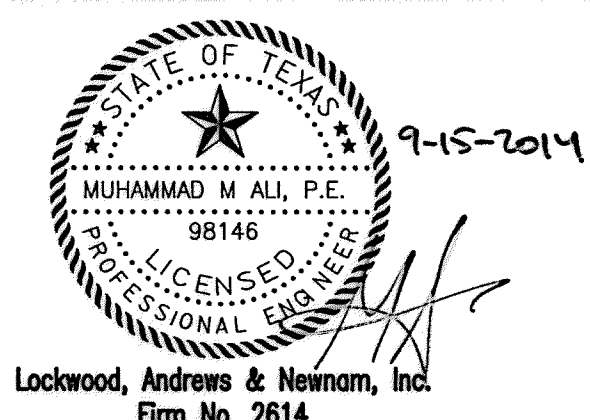
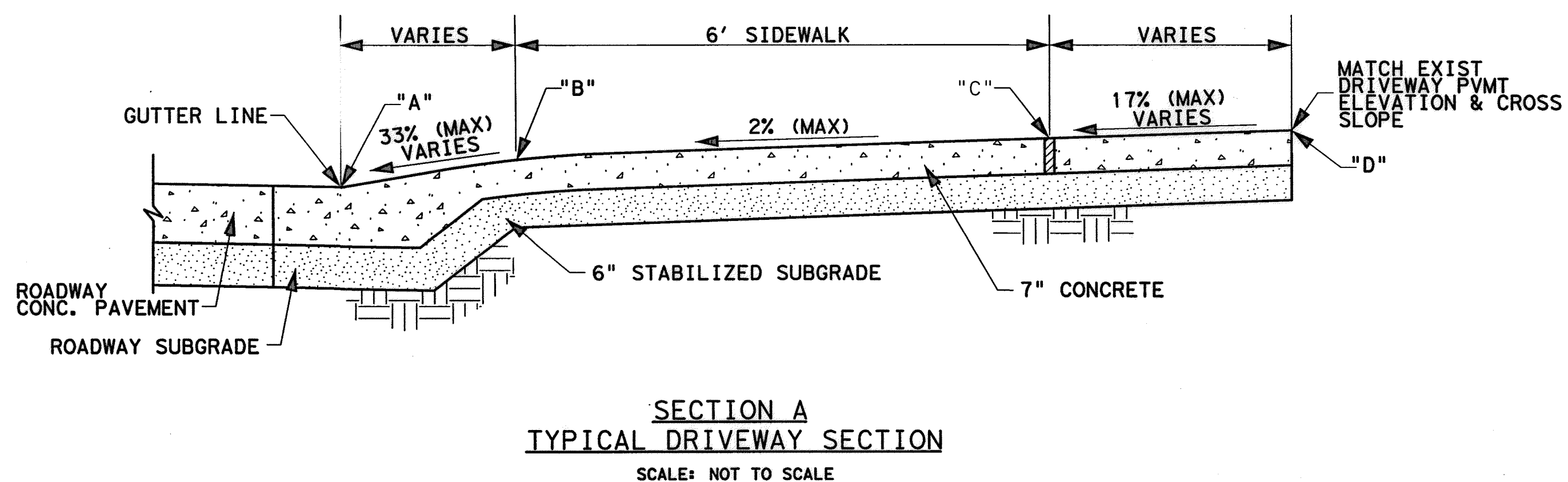
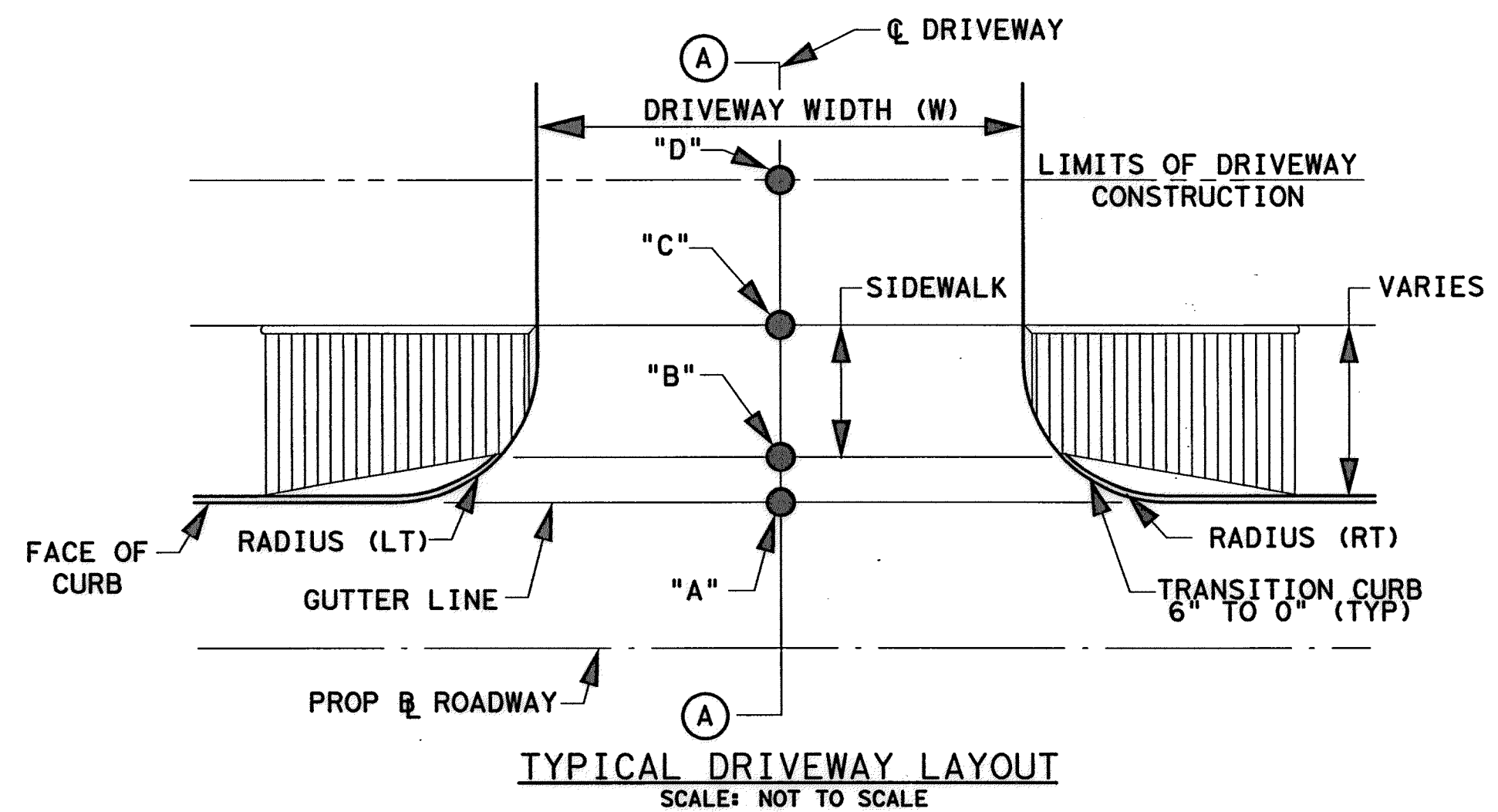
SEE LUMPKIN P&P SHEETS

LUMPKIN RD.

DRIVEWAY NO.	DRIVEWAY CL STATION	LT/RT	OFFSET *				ELEVATION				RADIUS		DRIVEWAY WIDTH (W)	DRIVEWAY THICKNESS	Slope (%)			SIDEWALK WIDTH THRU DRIVEWAY	DRIVEWAY TYPE
			POINT "A"	POINT "B"	POINT "C"	POINT "D"	POINT "A"	POINT "B"	POINT "C"	POINT "D"	LT	RT			A-B	B-C	C-D		
1	2+93.40	LT	20.00	21.50	26.00	30.00	78.38	78.53	78.62	78.62	10'	10'	27.00	7" CONC	10.0%	2.0%	0.0%	4.5'	COMMERCIAL
2	2+93.49	RT	20.00	21.50	26.00	30.00	78.38	78.53	78.62	78.62	10'	10'	27.00	7" CONC	10.0%	2.0%	0.0%	4.5'	COMMERCIAL
3	4+77.53	RT	20.00	21.50	26.00	30.00	77.86	78.01	78.10	78.10	10'	10'	35.00	7" CONC	10.0%	2.0%	0.0%	4.5'	COMMERCIAL
4	5+30.06	LT	20.00	21.50	26.00	30.00	77.89	78.19	78.28	78.79	10'	10'	35.00	7" CONC	20.0%	2.0%	12.8%	4.5'	COMMERCIAL
5	6+21.27	RT	20.00	21.50	26.00	30.00	78.27	78.42	78.51	78.79	10'	10'	35.00	7" CONC	10.0%	2.0%	7.0%	4.5'	COMMERCIAL
6	7+01.48	RT	20.00	21.50	26.00	35.00	78.61	78.76	78.85	79.47	10'	10'	35.00	7" CONC	10.0%	2.0%	6.9%	4.5'	COMMERCIAL
7	8+65.76	RT	20.00	21.50	26.00	35.00	79.30	79.45	79.54	80.10	10'	10'	35.00	7" CONC	10.0%	2.0%	6.2%	4.5'	COMMERCIAL
8	8+93.36	LT	20.00	21.50	26.00	40.00	79.41	79.56	79.65	80.68	10'	10'	16.00	7" CONC	10.0%	2.0%	7.4%	4.5'	COMMERCIAL
9	11+43.34	RT	20.00	21.50	26.00	30.00	80.00	80.15	80.24	80.47	10'	10'	35.00	7" CONC	10.0%	2.0%	5.7%	4.5'	COMMERCIAL
10	13+15.45	LT	20.00	21.50	26.00	35.00	80.43	80.66	80.75	81.82	10'	10'	31.00	7" CONC	15.0%	2.0%	11.9%	4.5'	COMMERCIAL
11	15+88.13	LT	20.00	21.50	26.00	35.00	80.97	81.20	81.29	82.20	10'	10'	35.00	7" CONC	15.0%	2.0%	10.2%	4.5'	COMMERCIAL
12	15+89.58	RT	20.00	21.50	26.00	35.00	80.98	81.21	81.30	82.20	10'	10'	25.00	7" CONC	15.0%	2.0%	10.1%	4.5'	COMMERCIAL
13	17+05.06	RT	20.00	21.50	26.00	35.00	81.79	82.02	82.11	82.97	10'	10'	20.00	7" CONC	15.0%	2.0%	9.6%	4.5'	COMMERCIAL
14	17+68.29	RT	20.00	21.50	26.00	40.00	82.24	82.47	82.56	84.53	10'	10'	20.00	7" CONC	15.0%	2.0%	14.1%	4.5'	COMMERCIAL
15	18+67.02	RT	20.00	21.50	26.00	40.00	82.93	83.16	83.25	85.03	10'	10'	20.00	7" CONC	15.0%	2.0%	12.8%	4.5'	COMMERCIAL
16	19+99.37	RT	20.00	21.50	26.00	40.00	83.86	84.01	84.10	85.40	10'	10'	28.00	7" CONC	10.0%	2.0%	9.3%	4.5'	COMMERCIAL
17	20+97.29	RT	20.00	21.50	26.00	40.00	84.54	84.69	84.78	86.67	10'	10'	30.00	7" CONC	10.0%	2.0%	13.5%	4.5'	COMMERCIAL
18	21+31.65	RT	20.00	21.50	26.00	40.00	84.79	84.94	85.03	86.72	10'	10'	30.00	7" CONC	10.0%	2.0%	12.1%	4.5'	COMMERCIAL
19	24+34.02	RT	20.00	21.50	26.00	38.00	84.57	84.80	84.89	85.44	10'	10'	13.00	7" CONC	15.0%	2.0%	4.6%	4.5'	COMMERCIAL
20	25+18.46	RT	20.00	21.50	26.00	35.00	84.32	84.47	84.56	85.49	10'	10'	35.00	7" CONC	10.0%	2.0%	10.3%	4.5'	COMMERCIAL
21	25+47.13	LT	20.00	21.50	26.00	35.00	84.23	84.46	84.55	85.55	10'	10'	23.00	7" CONC	15.0%	2.0%	11.2%	4.5'	COMMERCIAL
22	26+16.60	RT	20.00	21.50	26.00	40.00	84.20	84.43	84.52	86.48	10'	10'	35.00	7" CONC	15.0%	2.0%	14.0%	4.5'	COMMERCIAL
23	26+98.50	LT	20.00	21.50	26.00	35.00	84.45	84.68	84.77	85.94	10'	10'	29.00	7" CONC	15.0%	2.0%	13.1%	4.5'	COMMERCIAL
24	27+13.60	RT	20.00	21.50	26.00	35.00	84.50	84.73	84.82	86.12	10'	10'	32.00	7" CONC	15.0%	2.0%	14.5%	4.5'	COMMERCIAL
25	27+60.60	LT	20.00	21.50	26.00	40.00	84.64	84.87	84.96	86.43	10'	10'	31.00	7" CONC	15.0%	2.0%	10.5%	4.5'	COMMERCIAL
26	27+97.29	RT	20.00	21.50	26.00	35.00	84.75	84.98	85.07	86.35	10'	10'	21.00	7" CONC	15.0%	2.0%	14.3%	4.5'	COMMERCIAL
27	29+48.15	LT	20.00	21.50	26.00	35.00	84.36	84.59	84.68	86.00	10'	10'	23.00	7" CONC	15.0%	2.0%	14.7%	4.5'	COMMERCIAL
28	29+53.18	RT	20.00	21.50	26.00	40.00	84.34	84.57	84.66	86.57	10'	10'	20.00	7" CONC	15.0%	2.0%	13.7%	4.5'	COMMERCIAL
29	31+72.32	LT	20.00	21.50	26.00	45.00	83.43	83.73	83.82	86.48	10'	10'	27.00	7" CONC	20.0%	2.0%	14.0%	4.5'	COMMERCIAL
30	32+46.77	LT	20.00	21.50	26.00	45.00	83.55	83.85	83.94	86.28	10'	10'	34.00	7" CONC	20.0%	2.0%	12.3%	4.5'	COMMERCIAL
31	33+27.40	RT	20.00	21.50	26.00	40.00	83.97	84.12	84.21	85.48	10'	10'	14.00	7" CONC	10.0%	2.0%	9.1%	4.5'	COMMERCIAL
32	34+02.45	LT	20.00	21.50	26.00	40.00	83.74	84.04	84.13	86.31	10'	10'	35.00	7" CONC	20.0%	2.0%	15.6%	4.5'	COMMERCIAL
33	35+04.98	RT	20.00	21.50	26.00	45.00	83.73	83.96	84.05	86.71	10'	10'	34.00	7" CONC	15.0%	2.0%	14.0%	4.5'	COMMERCIAL
34	35+74.05	LT	20.00	21.50	26.00	45.00	84.20	84.43	84.52	86.58	10'	10'	34.00	7" CONC	15.0%	2.0%	10.9%	4.5'	COMMERCIAL
35	36+30.62	LT	20.00	21.50	26.00	40.00	84.68	84.91	85.00	87.17	10'	10'	35.00	7" CONC	15.0%	2.0%	15.5%	4.5'	RESIDENTIAL
36	36+32.06	RT	20.00	21.50	26.00	40.00	84.70	84.93	85.02	87.15	10'	10'	35.00	7" CONC	15.0%	2.0%	15.3%	4.5'	RESIDENTIAL

NOTE:  
 1. REFER TO CONCRETE SIDEWALK & DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION  
 2. ELEVATION AT POINT "D" IS (+/-) AS SHOWN IN DRIVEWAY TABLE. MATCH EXISTING ELEVATION AT ROW.  
 3. REFER TO PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION

LEGEND:  
 \* OFFSET DISTANCE TO POINT "D" IS FROM PROPOSED CL LUMPKIN.



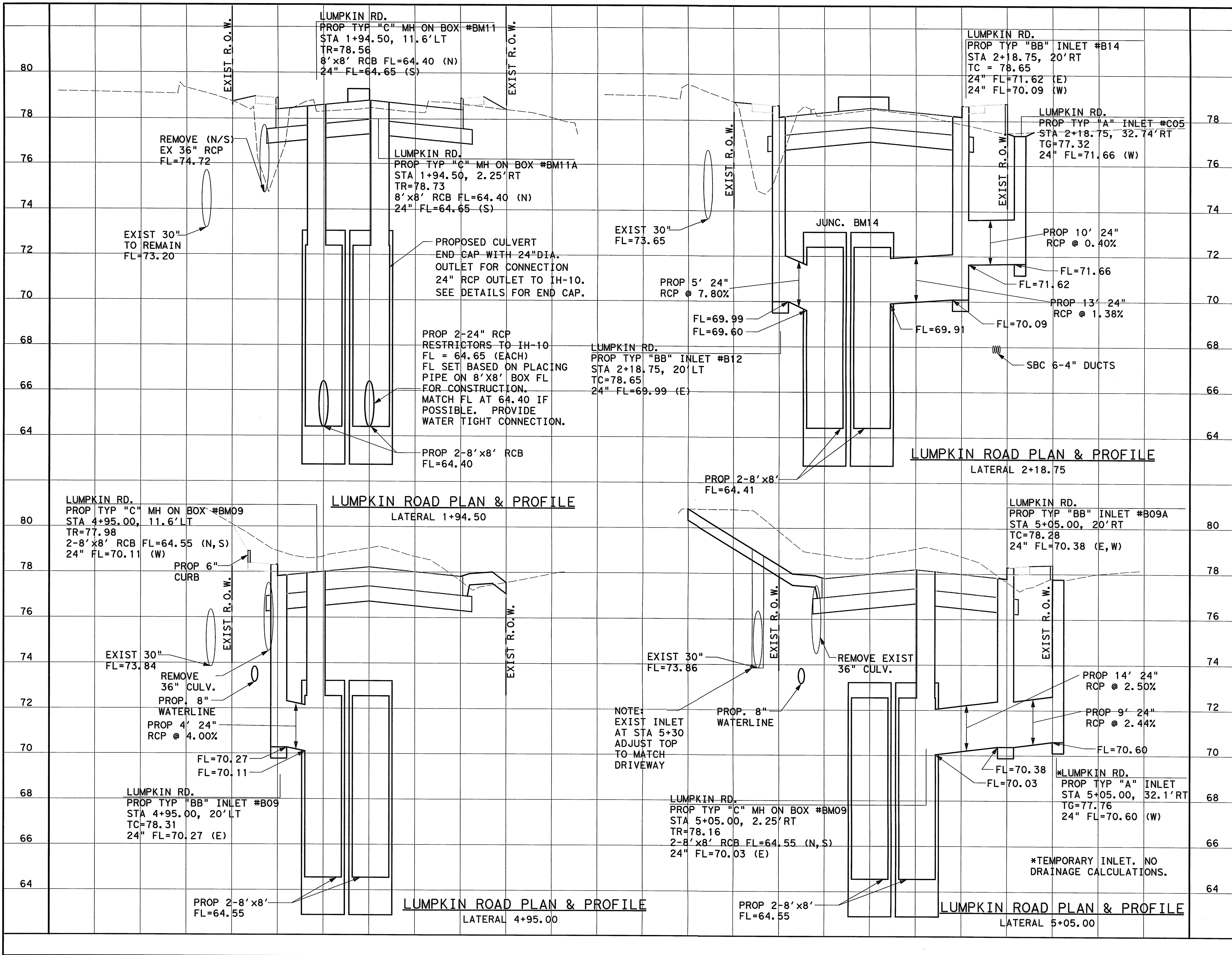
MEMORIAL CITY REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY

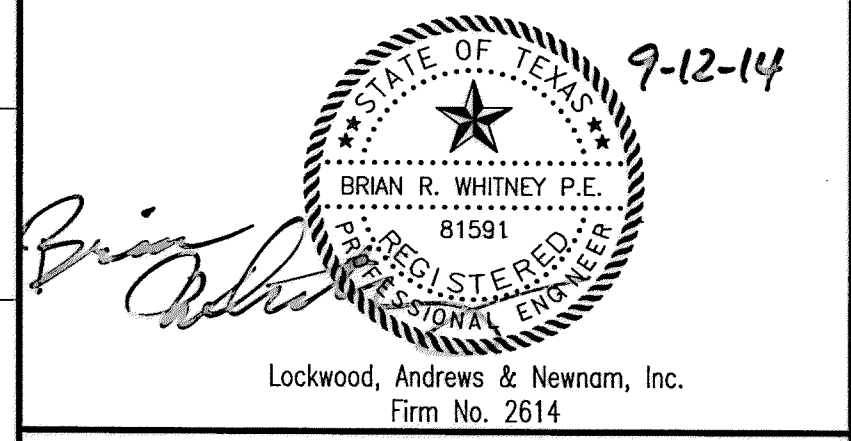
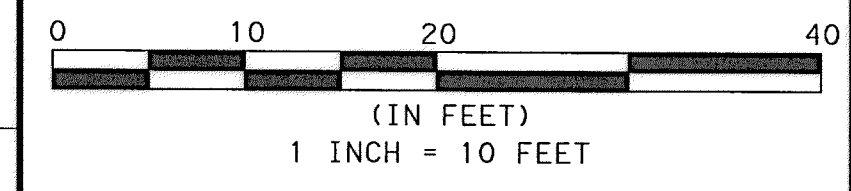
LUMPKIN ROAD  
 N-T17000-0012-3  
 DRIVEWAY TABULATION  
 DETAILS

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

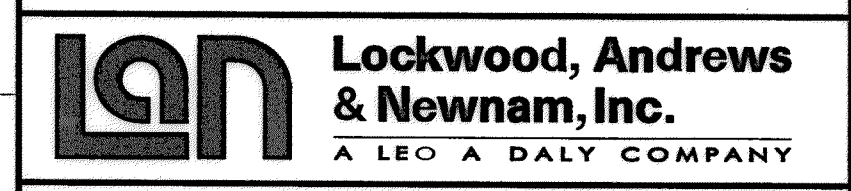
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
N. T. S.		
SHEET:	82 OF 226	



**NOTES:**  
 1. SEE LATERAL SHEET 7 OF 7 FOR LATERALS AT STA 4+30.00, 5+70.00, AND 14+86.83.



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

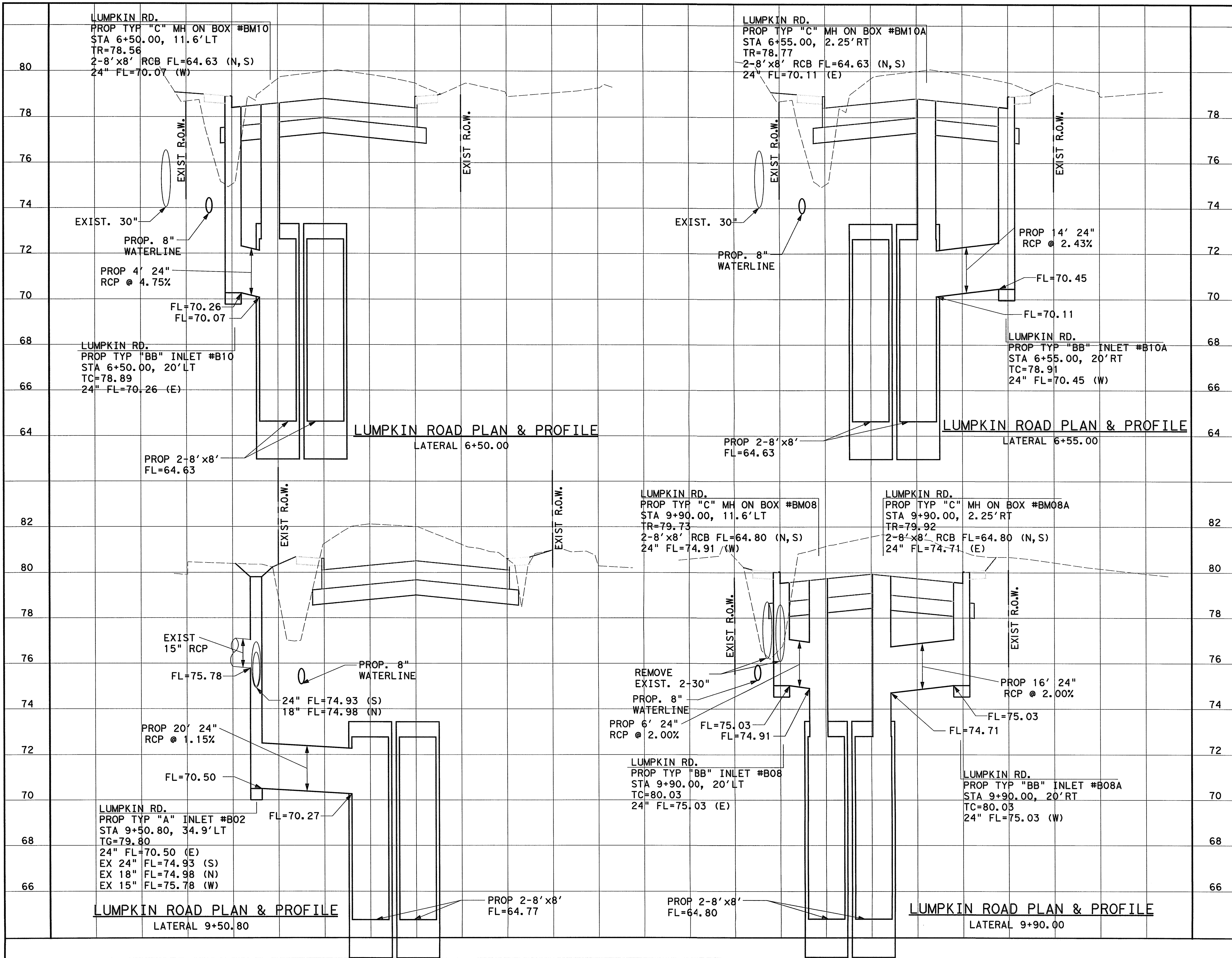


**LUMPKIN ROAD N-T17000-0012-3 STORM SEWER LATERALS**

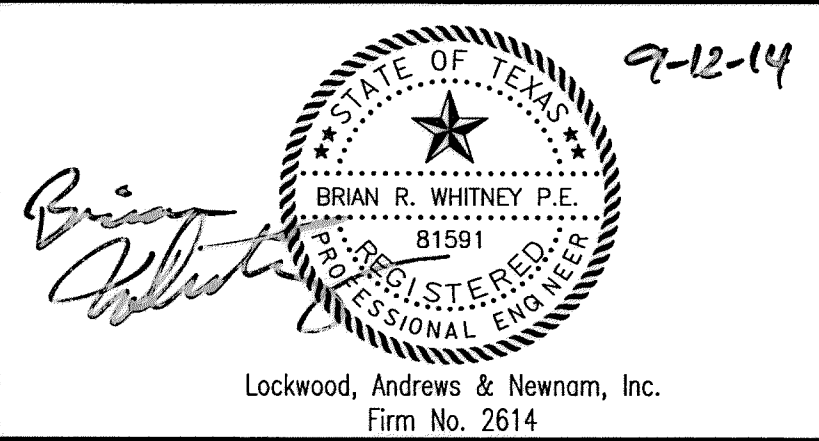
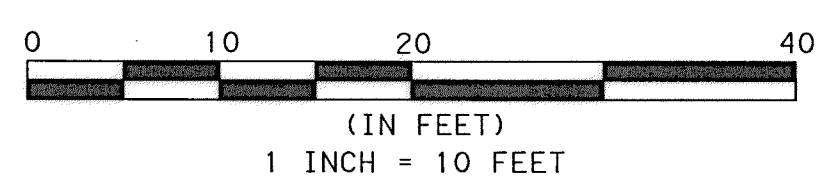
SHEET 1 OF 12  
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG. NO.	
VERT: 1"=2'	HORZ: 1"=10'	
SHEET:	83 OF 226	

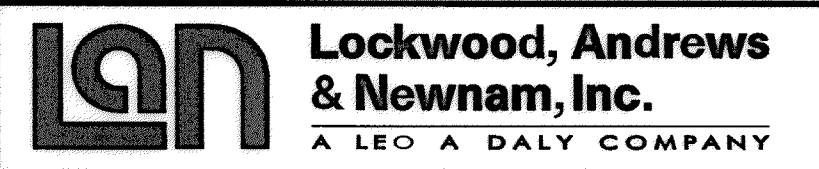
APP. REVISIONS No. DATE 9/5/2014 8:35:12 AM p:\projects\130-10384-001\4-0-Product\Drawings\Drawings\4-01-1510R\SWR-LAT-01



**NOTES:**  
 1. SEE LATERAL SHEET 7 OF 7 FOR LATERALS AT STA 4+30.00, 5+70.00, AND 14+86.83.



Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614



LUMPKIN ROAD  
 N-T17000-0012-3  
 STORM SEWER  
 LATERALS

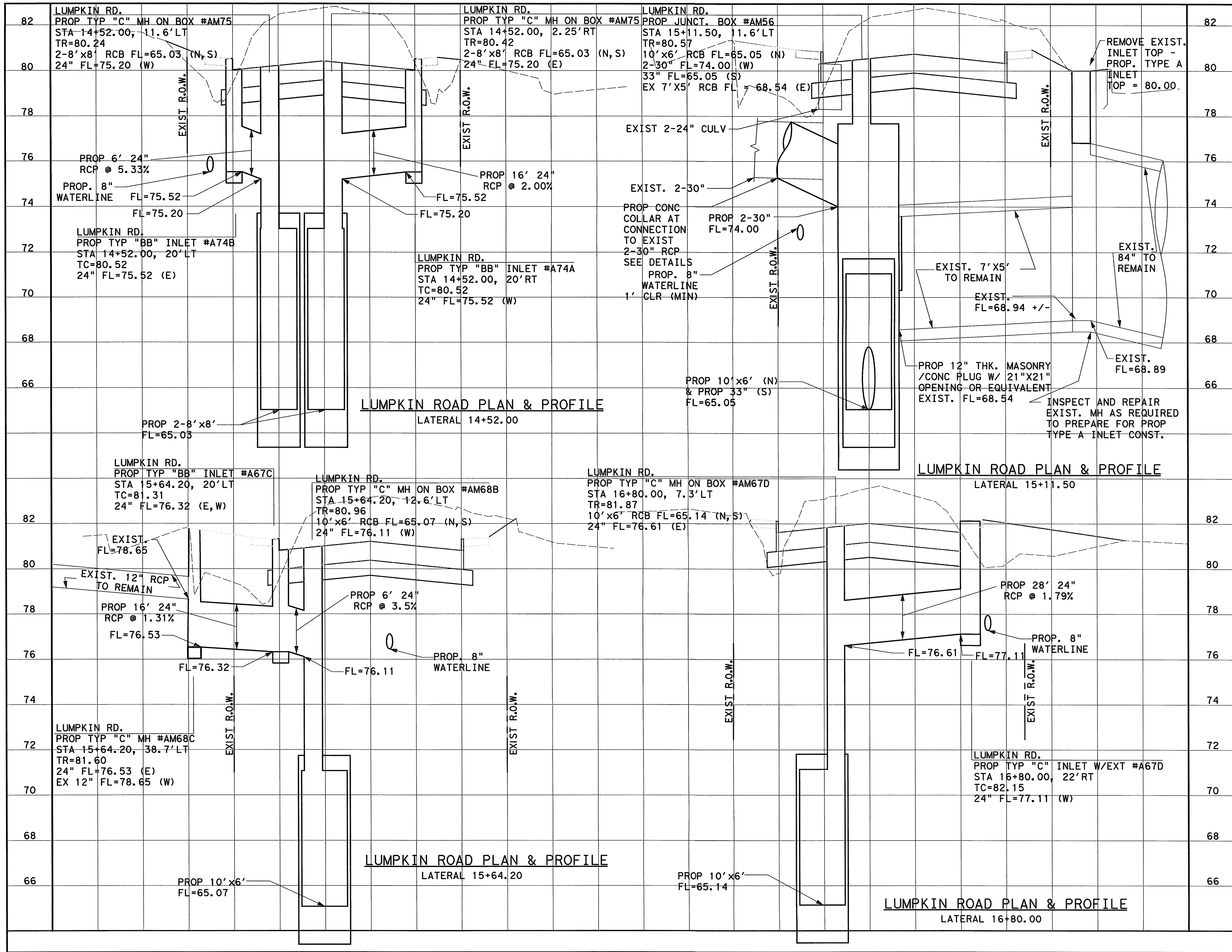
SHEET 2 OF 12  
 CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG. NO.	
VERT: 1"=2'	HORZ: 1"=10'	
SHEET:	84 OF 226	

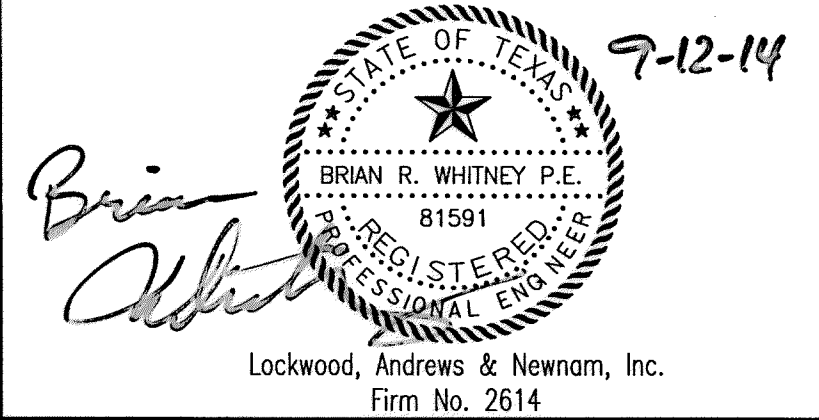
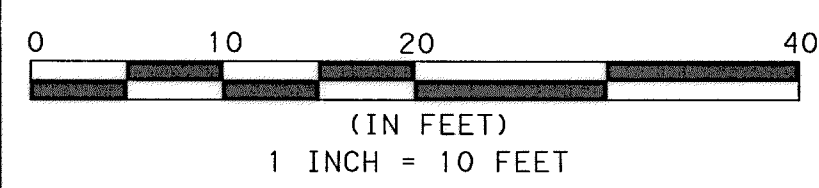
APP. REVISIONS No. DATE

9/5/2014 8:35:21 AM

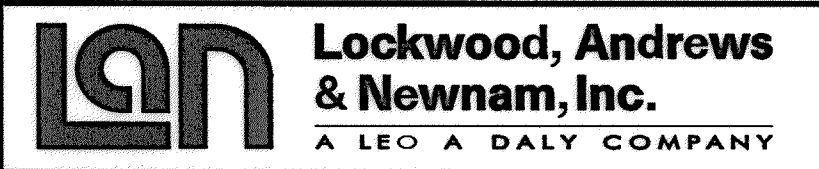
pw \\ ladbw.ladco.int\proj\wise\Documents\Projects\130-10384-001\4-0-0-Products\on\4-01-Drawings\Drawings\SWR-LAT-02.dgn



**NOTES:**  
 1. SEE LATERAL SHEET 7 OF 7 FOR LATERALS AT STA 4+30.00, 5+70.00, AND 14+86.83.



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

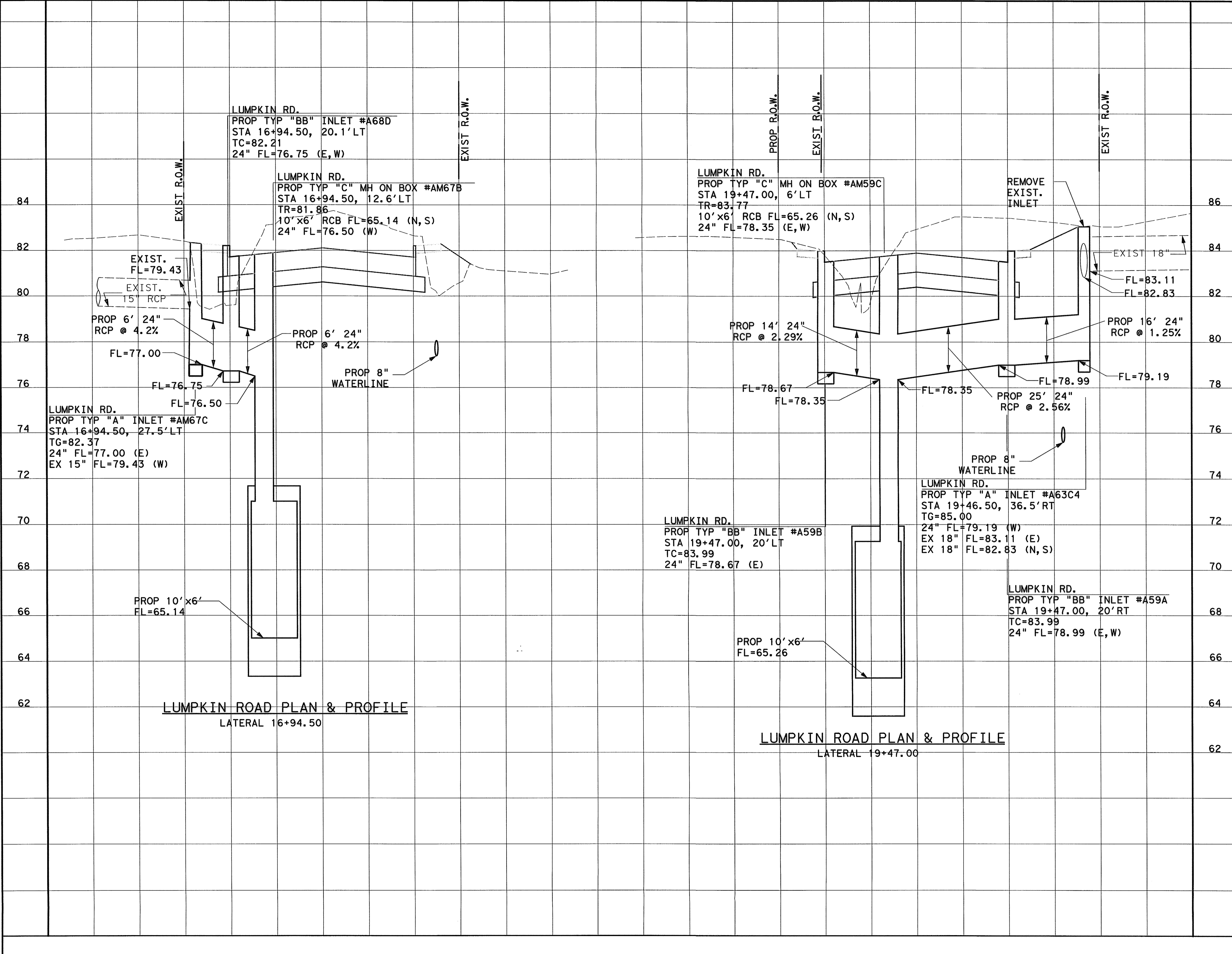


LUMPKIN ROAD  
 N-T17000-0012-3  
 STORM SEWER  
 LATERALS

SHEET 3 OF 12  
 CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

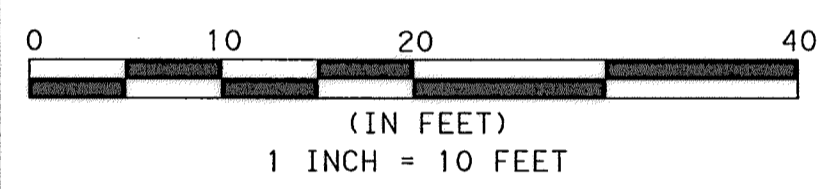
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'	HORIZ: 1"=10'	
SHEET:	85 OF 226	

APP.	REVISIONS
No.	DATE



**LUMPKIN ROAD PLAN & PROFILE**  
LATERAL 16+94.50

**LUMPKIN ROAD PLAN & PROFILE**  
LATERAL 19+47.00



9-12-14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

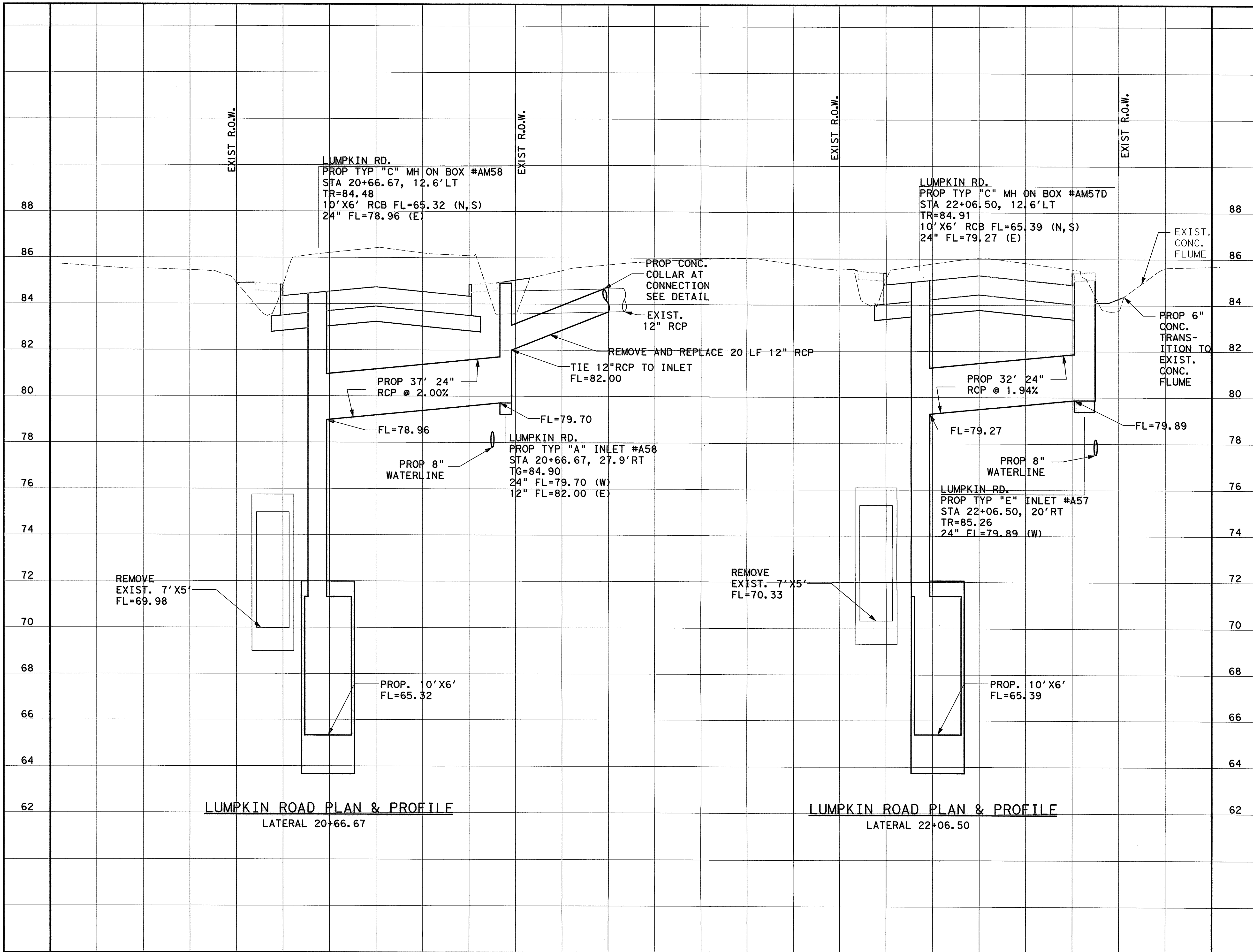
**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**LAN Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

**LUMPKIN ROAD N-T17000-0012-3**  
**STORM SEWER LATERALS**  
SHEET 4 OF 12  
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

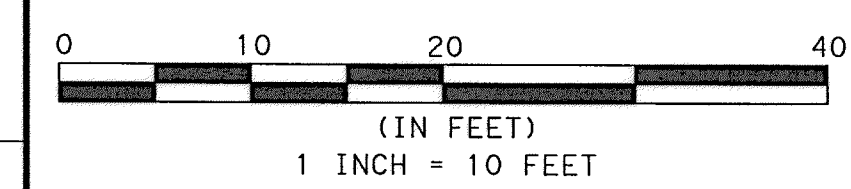
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SW
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DRG NO.	
VERT: 1"=2'		
HORZ: 1"=10'		
SHEET:	86 OF 226	

9/5/2014 8:35:37 AM M:\Intr\Projects\130-10384-001\4-0-Products\on\4-01-Drawings\Drawings\87-001+STORM+SW+LAT+04.dgn



LUMPKIN ROAD PLAN & PROFILE  
LATERAL 20+66.67

LUMPKIN ROAD PLAN & PROFILE  
LATERAL 22+06.50



9-12-14  
 STATE OF TEXAS  
 BRIAN R. WHITNEY P.E.  
 81591  
 REGISTERED PROFESSIONAL ENGINEER  
 Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

MEMORIAL CITY  
REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

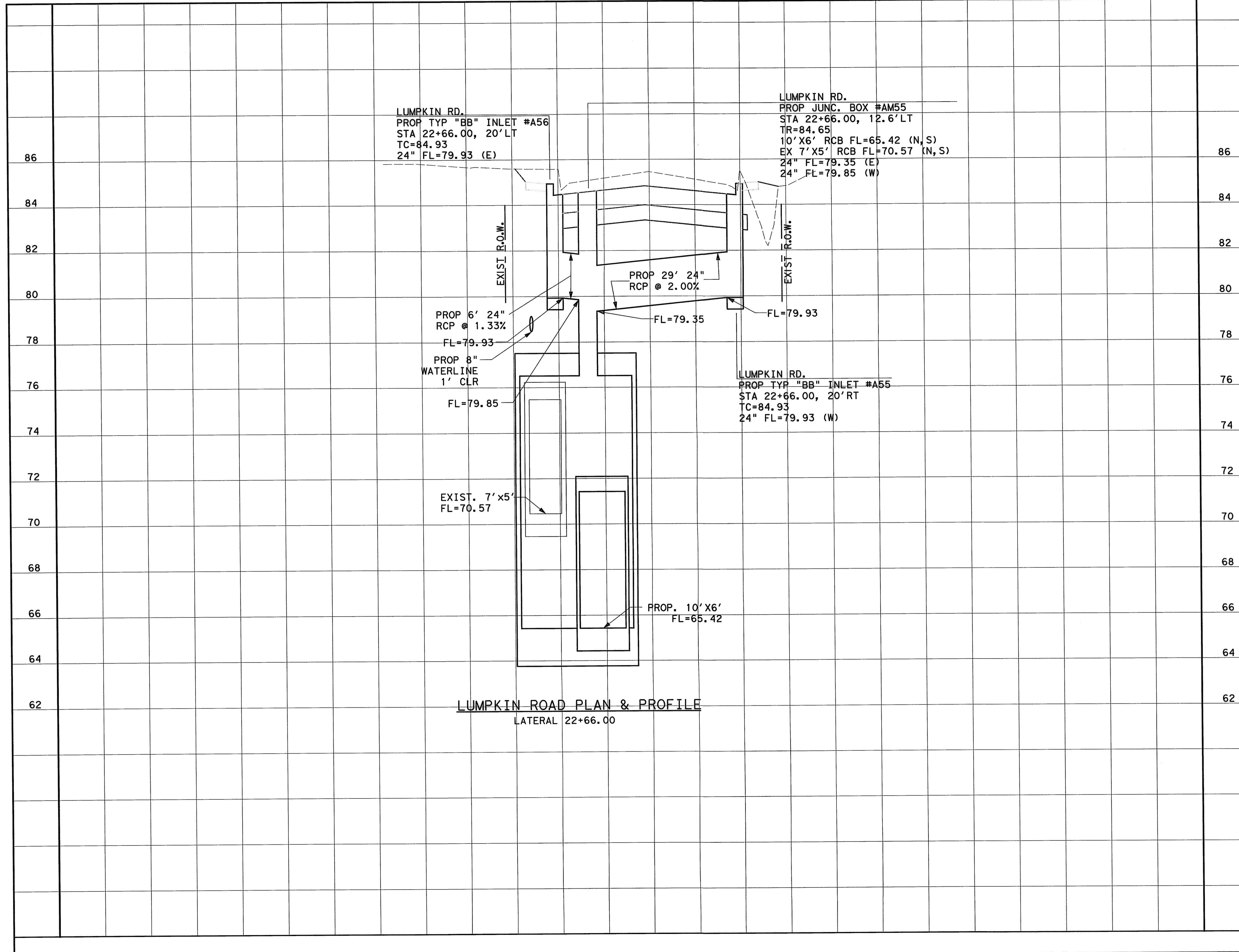
LUMPKIN ROAD  
N-T17000-0012-3  
STORM SEWER  
LATERALS

SHEET 5 OF 12  
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'		
HORZ: 1"=10'		
SHEET:	87 OF 226	

REVISIONS	No.	DATE

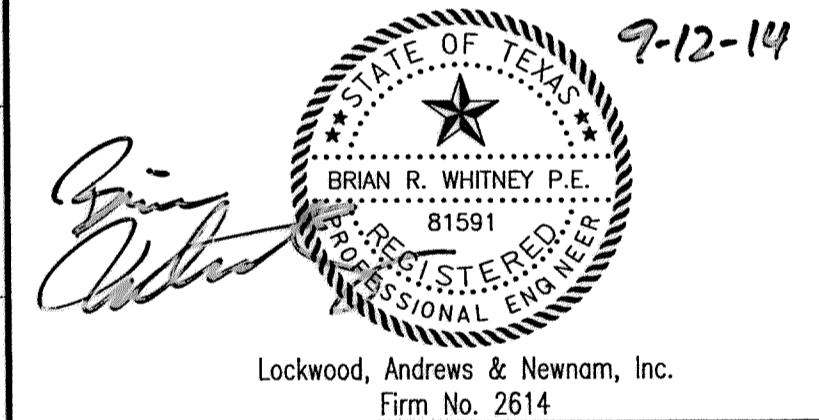
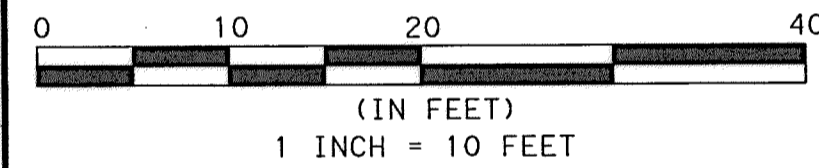
pw \\ l adpw. l adpw. int\project\work\Documents\Projects\130-10384-001\4-0-Product\on\4-01-Drawings\Drawings\88-001\STORM\SWR\LAT\*05.dgn 9/5/2014 8:35:46 AM M\Guthrie



LUMPKIN RD.  
 PROP TYP "BB" INLET #A56  
 STA 22+66.00, 20' LT  
 TC=84.93  
 24" FL=79.93 (E)

LUMPKIN RD.  
 PROP JUNC. BOX #AM55  
 STA 22+66.00, 12.6' LT  
 TR=84.65  
 10' X 6' RCB FL=65.42 (N, S)  
 EX 7' X 5' RCB FL=70.57 (N, S)  
 24" FL=79.35 (E)  
 24" FL=79.85 (W)

LUMPKIN RD.  
 PROP TYP "BB" INLET #A55  
 STA 22+66.00, 20' RT  
 TC=84.93  
 24" FL=79.93 (W)



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

**LUMPKIN ROAD**  
 N-T17000-0012-3  
**STORM SEWER LATERALS**

SHEET 6 OF 12

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'		
HORZ: 1"=10'		
SHEET:	88 OF 226	

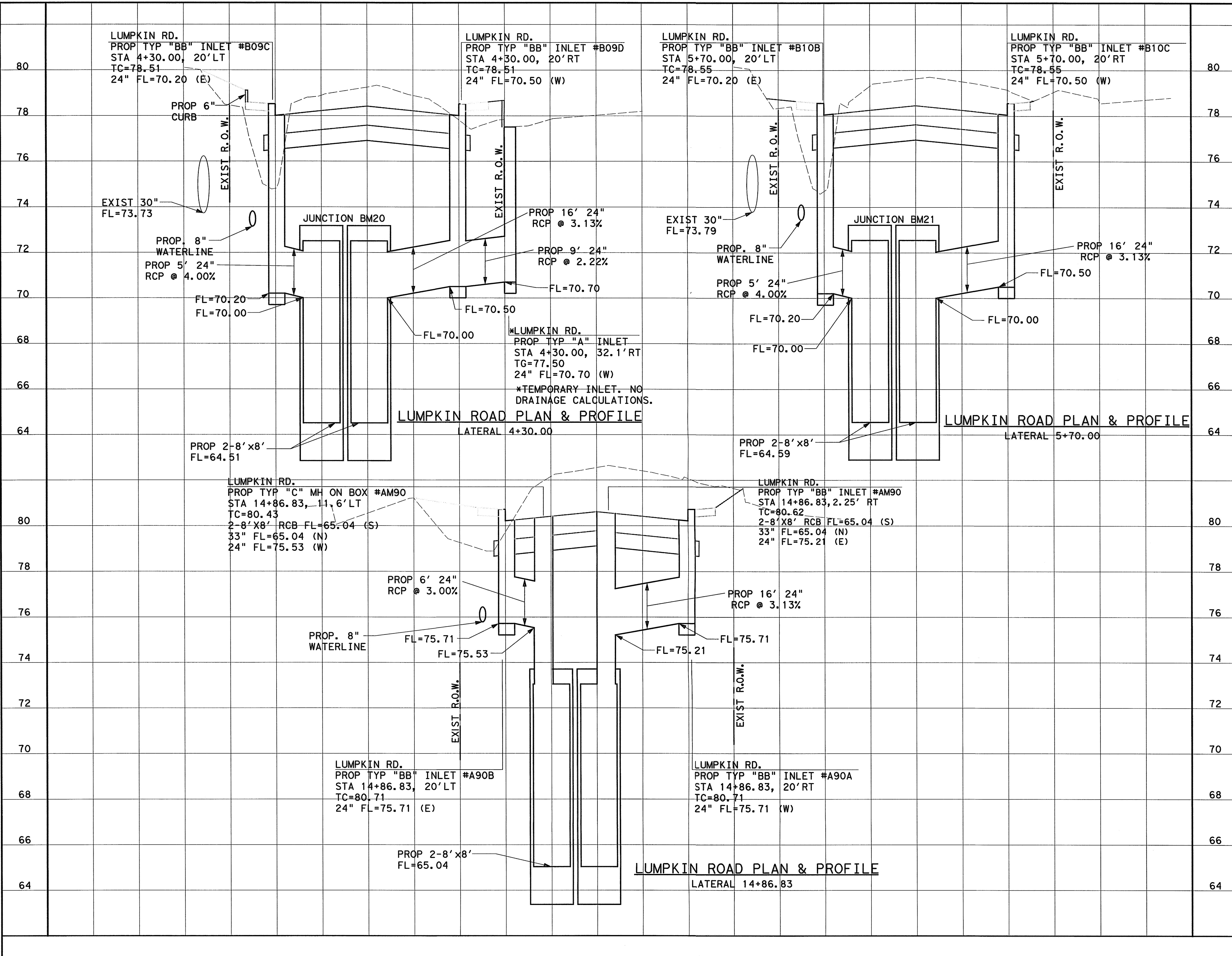
APP. \_\_\_\_\_

REVISIONS \_\_\_\_\_

No. \_\_\_\_\_ DATE \_\_\_\_\_

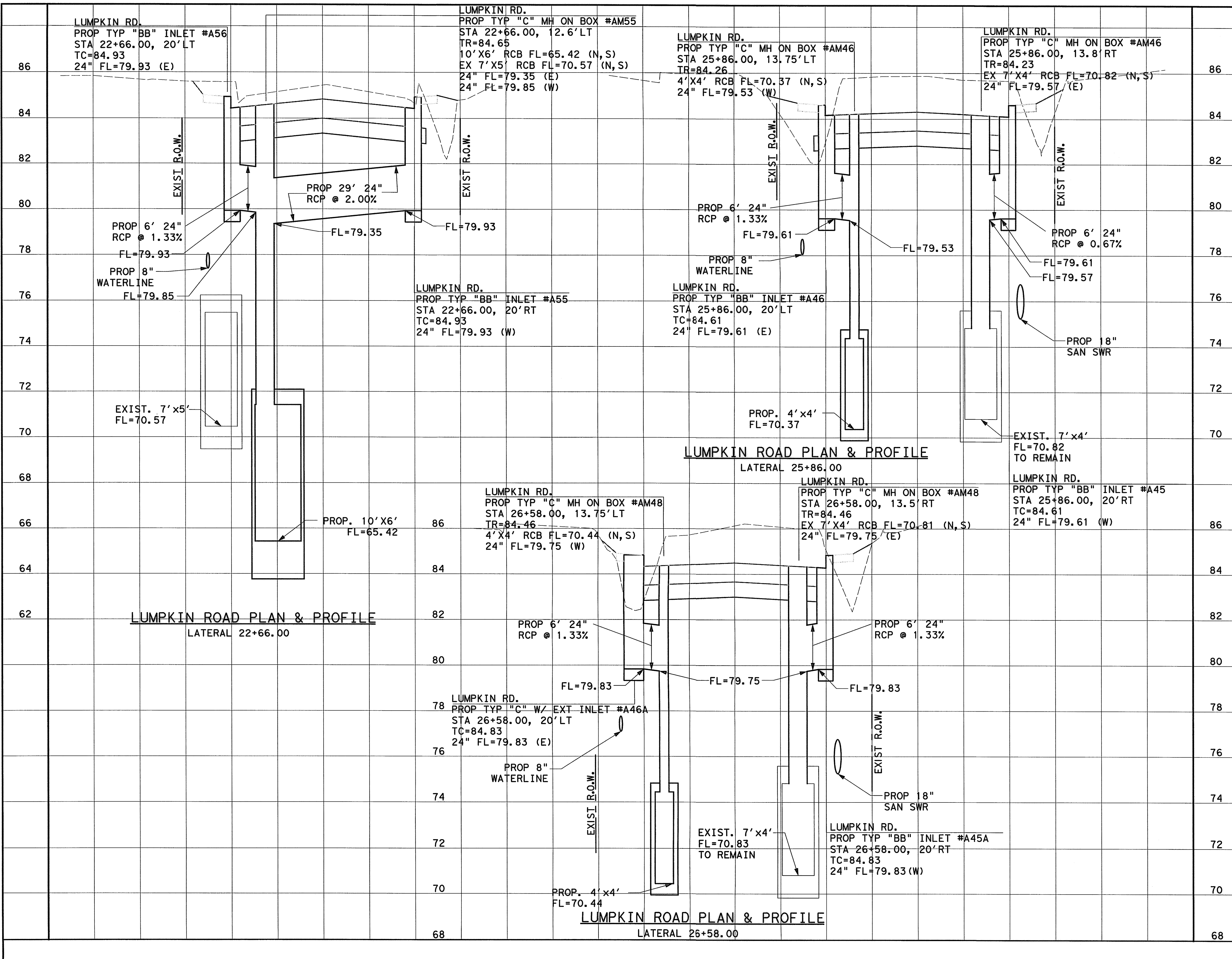
M:\Guthrie  
 8:35:55 AM  
 9/5/2014  
 I:\projects\130-10384-001\4-0-Production\Drawings\Drawings\SWR-LAT-06.dgn





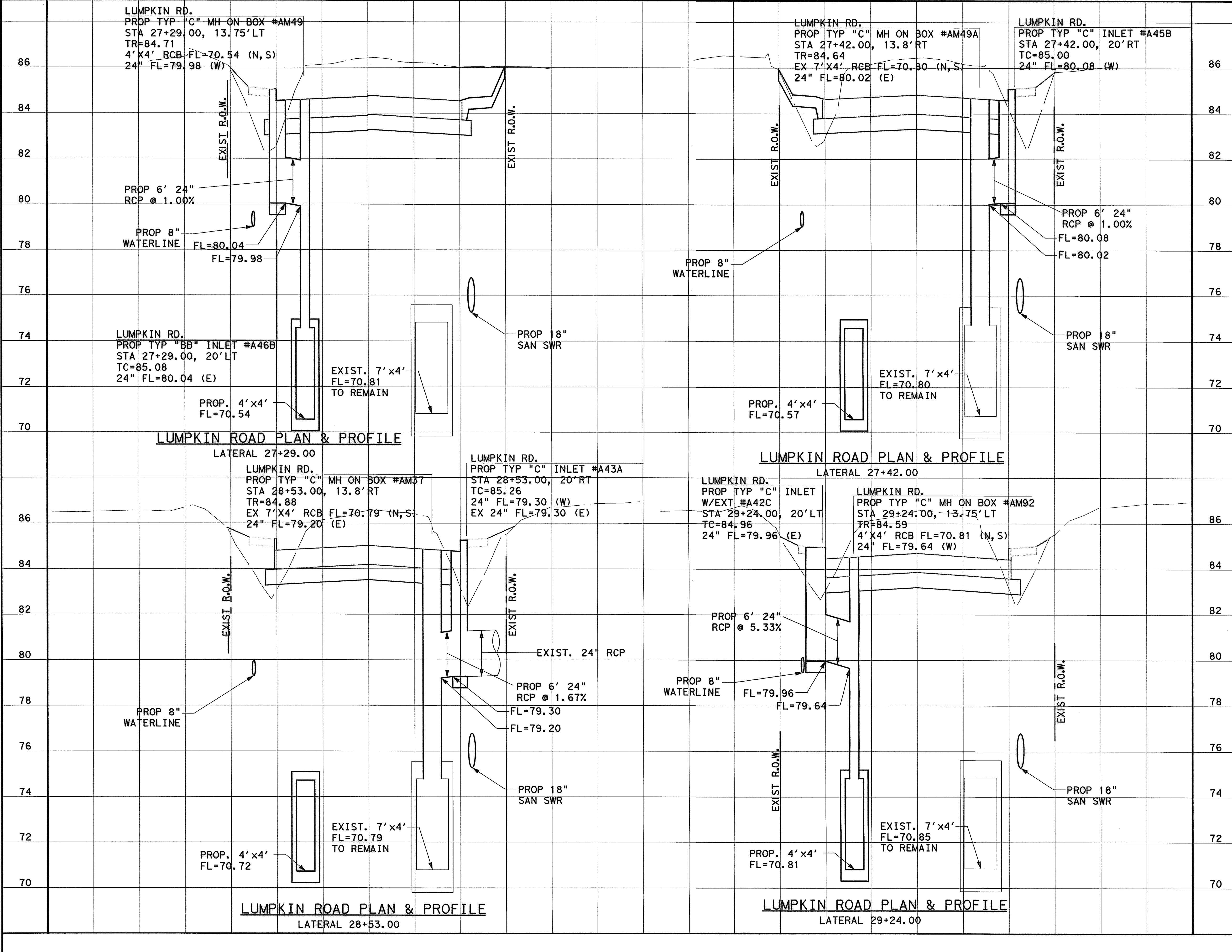
	REVISIONS No. DATE APP.
0 10 20 40 (IN FEET) 1 INCH = 10 FEET	
Lockwood, Andrews & Newnam, Inc. Firm No. 2614	
<b>MEMORIAL CITY REDEVELOPMENT AUTHORITY</b>	
<b>LUMPKIN ROAD N-T17000-0012-3</b> <b>STORM SEWER LATERALS</b>	
SHEET 7 OF 12 <b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
WATER ST. & BRIDGE FILE NO. 1 DRAWING SCALE: VERT: 1"=2' HORZ: 1"=10' SHEET: 89 OF 226	WASTEWATER STORMWATER FACILITY CITY DWG NO.

9/15/2014 8:36:04 AM M:\adpw\_tedco\_int\proj\ctw\sa\Documents\Projects\130-10384-001\4-0-Product\on\4-01-Drawings\Drainage\89-001\*STORM\*SW\*LAT\*07



	REVISIONS No. DATE
0 10 20 40 (IN FEET) 1 INCH = 10 FEET	
<b>MEMORIAL CITY REDEVELOPMENT AUTHORITY</b>	
<b>LUMPKIN ROAD</b> N-T17000-0012-3 <b>STORM SEWER LATERALS</b>	
SHEET 8 OF 12 <b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
WATER ST. & BRIDGE FILE NO. : DRAWING SCALE: VERT: 1"=2' HORZ: 1"=10' SHEET:	WASTEWATER STORMWATER FACILITY CITY DNG NO. 90 OF 226

APP: [ ]  
 No. DATE [ ] [ ]  
 9/5/2014  
 8:36:12 AM  
 MUGuhh-1e  
 9/5/2014  
 8:36:12 AM  
 MUGuhh-1e  
 9/5/2014  
 8:36:12 AM  
 MUGuhh-1e



<p><b>LUMPKIN ROAD PLAN &amp; PROFILE</b> LATERAL 27+29.00</p> <p>LUMPKIN RD. PROP TYP "C" MH ON BOX #AM49 STA 27+29.00, 13.75'LT TR=84.71 4'X4' RCB FL=70.54 (N,S) 24" FL=79.98 (W)</p> <p>EXIST. R.O.W.</p> <p>PROP 6' 24" RCP @ 1.00%</p> <p>PROP 8" WATERLINE FL=80.04 FL=79.98</p> <p>LUMPKIN RD. PROP TYP "BB" INLET #A46B STA 27+29.00, 20'LT TC=85.08 24" FL=80.04 (E)</p> <p>PROP. 4'x4' FL=70.54</p> <p>EXIST. 7'x4' FL=70.81 TO REMAIN</p> <p>PROP 18" SAN SWR</p>	<p><b>LUMPKIN ROAD PLAN &amp; PROFILE</b> LATERAL 27+42.00</p> <p>LUMPKIN RD. PROP TYP "C" MH ON BOX #AM49A STA 27+42.00, 13.8'RT TR=84.64 EX 7'X4' RCB FL=70.80 (N,S) 24" FL=80.02 (E)</p> <p>EXIST. R.O.W.</p> <p>PROP 6' 24" RCP @ 1.00%</p> <p>FL=80.08 FL=80.02</p> <p>LUMPKIN RD. PROP TYP "C" INLET #A45B STA 27+42.00, 20'RT TC=85.00 24" FL=80.08 (W)</p> <p>PROP 18" SAN SWR</p>
<p><b>LUMPKIN ROAD PLAN &amp; PROFILE</b> LATERAL 28+53.00</p> <p>LUMPKIN RD. PROP TYP "C" MH ON BOX #AM37 STA 28+53.00, 13.8'RT TR=84.88 EX 7'X4' RCB FL=70.79 (N,S) 24" FL=79.20 (E)</p> <p>EXIST. R.O.W.</p> <p>PROP 8" WATERLINE</p> <p>LUMPKIN RD. PROP TYP "C" INLET #A43A STA 28+53.00, 20'RT TC=85.26 24" FL=79.30 (W) EX 24" FL=79.30 (E)</p> <p>EXIST. 24" RCP</p> <p>PROP 6' 24" RCP @ 1.67%</p> <p>FL=79.30 FL=79.20</p> <p>PROP 18" SAN SWR</p> <p>EXIST. 7'x4' FL=70.79 TO REMAIN</p> <p>PROP. 4'x4' FL=70.72</p>	<p><b>LUMPKIN ROAD PLAN &amp; PROFILE</b> LATERAL 29+24.00</p> <p>LUMPKIN RD. PROP TYP "C" INLET W/EXT #A42C STA 29+24.00, 20'LT TC=84.96 24" FL=79.96 (E)</p> <p>EXIST. R.O.W.</p> <p>PROP 6' 24" RCP @ 5.33%</p> <p>PROP 8" WATERLINE FL=79.96 FL=79.64</p> <p>LUMPKIN RD. PROP TYP "C" MH ON BOX #AM92 STA 29+24.00, 13.75'LT TR=84.59 4'X4' RCB FL=70.81 (N,S) 24" FL=79.64 (W)</p> <p>EXIST. R.O.W.</p> <p>PROP 18" SAN SWR</p> <p>EXIST. 7'x4' FL=70.85 TO REMAIN</p> <p>PROP. 4'x4' FL=70.81</p>

9-12-14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEG A DALY COMPANY

**LUMPKIN ROAD N-T17000-0012-3**

**STORM SEWER LATERALS**

SHEET 9 OF 12

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

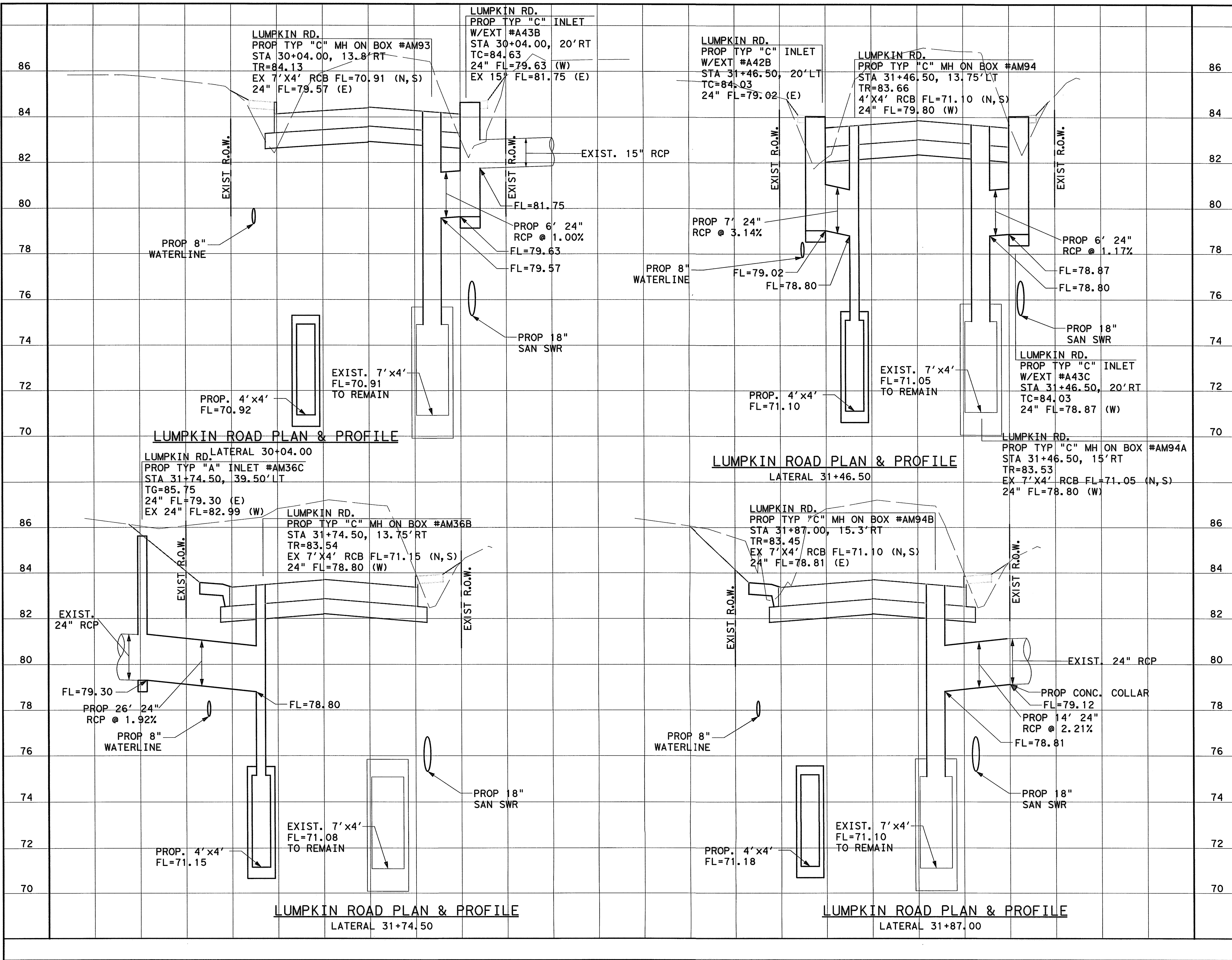
FILE NO.:

DRAWING SCALE:

VERT: 1"=2'  
HORZ: 1"=10'

SHEET: 91 OF 226

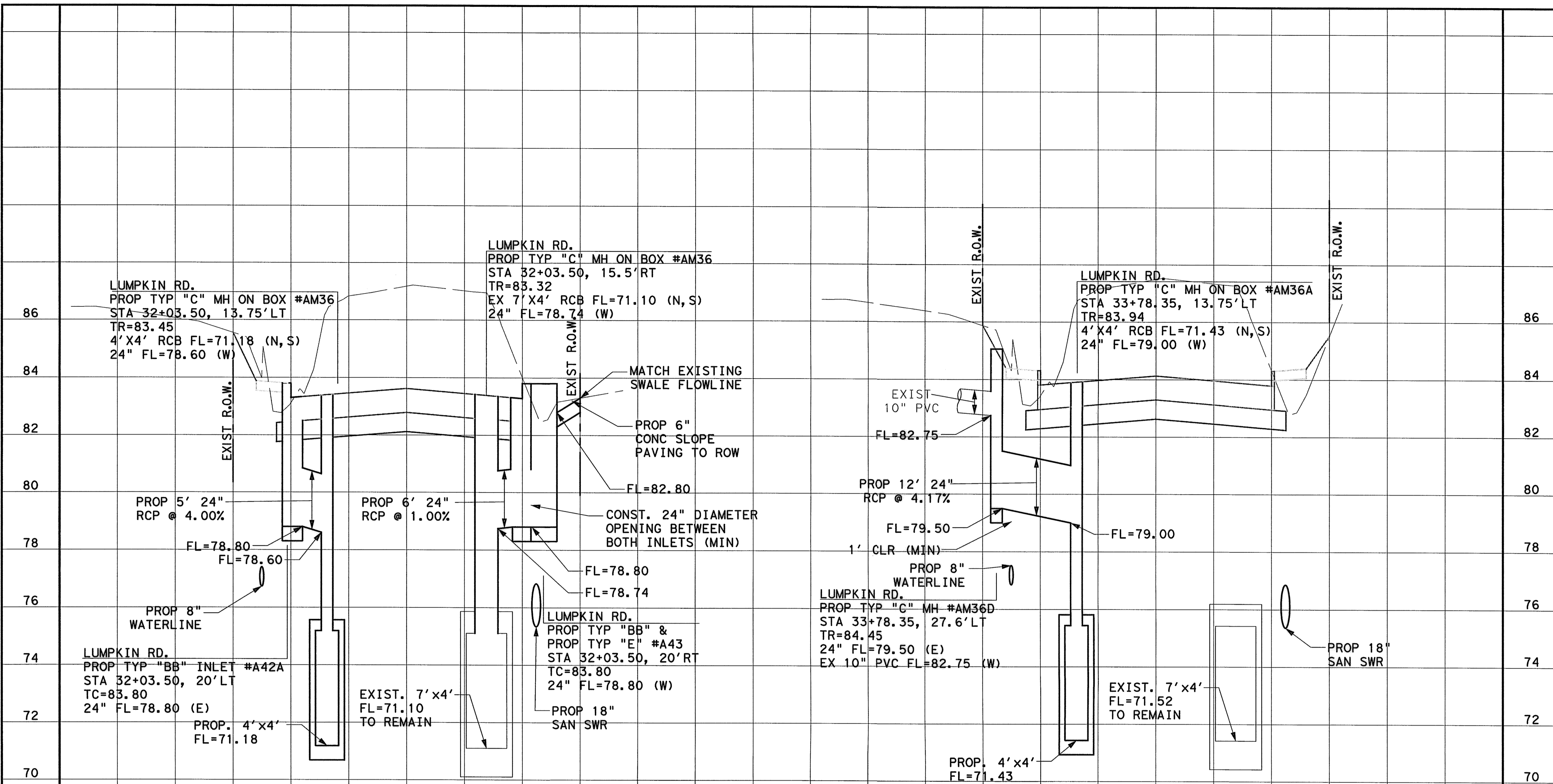
APP. REVISIONS No. DATE  
 9/5/2014 8:36:21 AM  
 M:\Guthrie\pwr\proj\projwise\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\Drawings\90-001\STORW\SWR\LAT\*09.dgn



	REVISIONS No. DATE APP.
0 10 20 40 (IN FEET) 1 INCH = 10 FEET	
<b>MEMORIAL CITY REDEVELOPMENT AUTHORITY</b>	
<b>LUMPKIN ROAD</b> N-T17000-0012-3 <b>STORM SEWER LATERALS</b>	
SHEET 10 OF 12 <b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
WATER ST. & BRIDGE FILE NO. : DRAWING SCALE: VERT: 1"=2' HORZ: 1"=10' SHEET:	WASTEWATER STORMWATER FACILITY CITY DWG NO. 92 OF 226

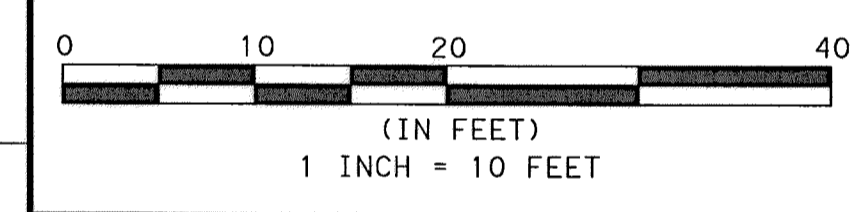
9/5/2014 8:36:30 AM M:\adpw\laddoc\1nt\proj\ctw\laddoc\Projects\130-10385-001\4-0-Product\10N4-01-Drawings\Drawings\130-10385-001-LAT\*10.dgn

APP
REVISIONS
No.
DATE



LUMPKIN ROAD PLAN & PROFILE  
LATERAL 32+03.50

LUMPKIN ROAD PLAN & PROFILE  
LATERAL 33+78.35



9-12-14

Brian R. Whitney, P.E.  
81591  
REGISTERED PROFESSIONAL ENGINEER  
Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

MEMORIAL CITY  
REDEVELOPMENT AUTHORITY

**Lockwood, Andrews & Newnam, Inc.**  
A LEQ A DALY COMPANY

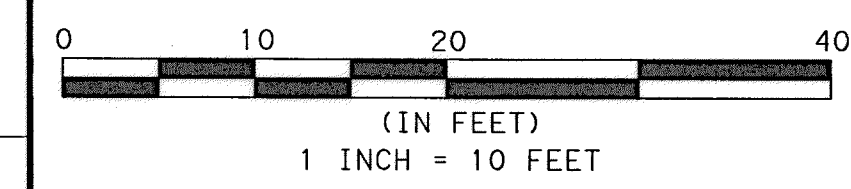
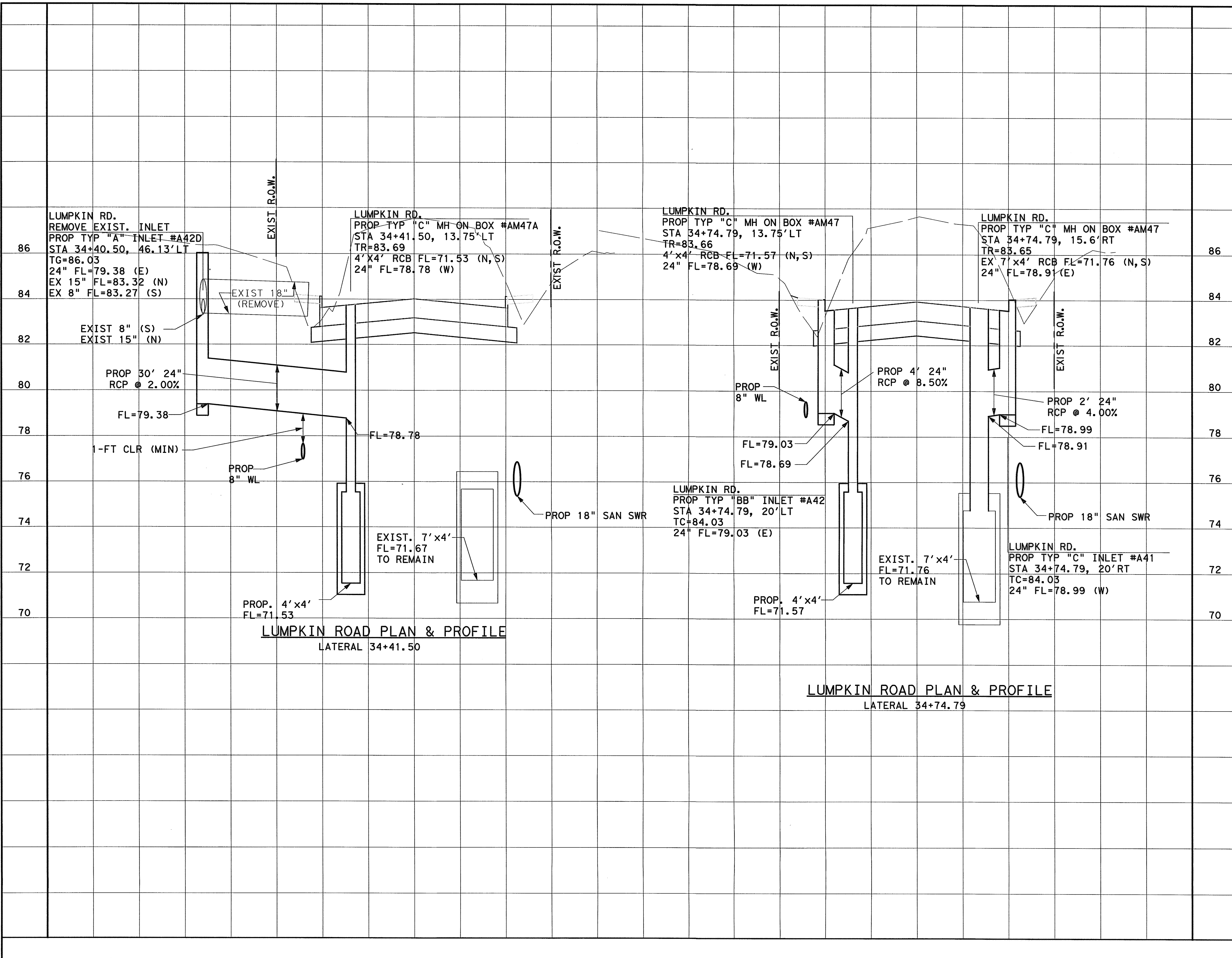
LUMPKIN ROAD  
N-T17000-0012-3  
STORM SEWER  
LATERALS

SHEET 11 OF 12  
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG. NO.	
VERT: 1"=2'		
HORZ: 1"=10'		
SHEET:	93 OF 226	

pw \\ ledpw. laddco. int1 project\laddco\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\Drawings\92-001-STORM-SWR-LAT\*11.dgn 9/5/2014 8:36:39 AM MUGuthrie

APP.	REVISIONS	No.	DATE



9-12-14

Brian R. Whitney, P.E.  
81591  
Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY

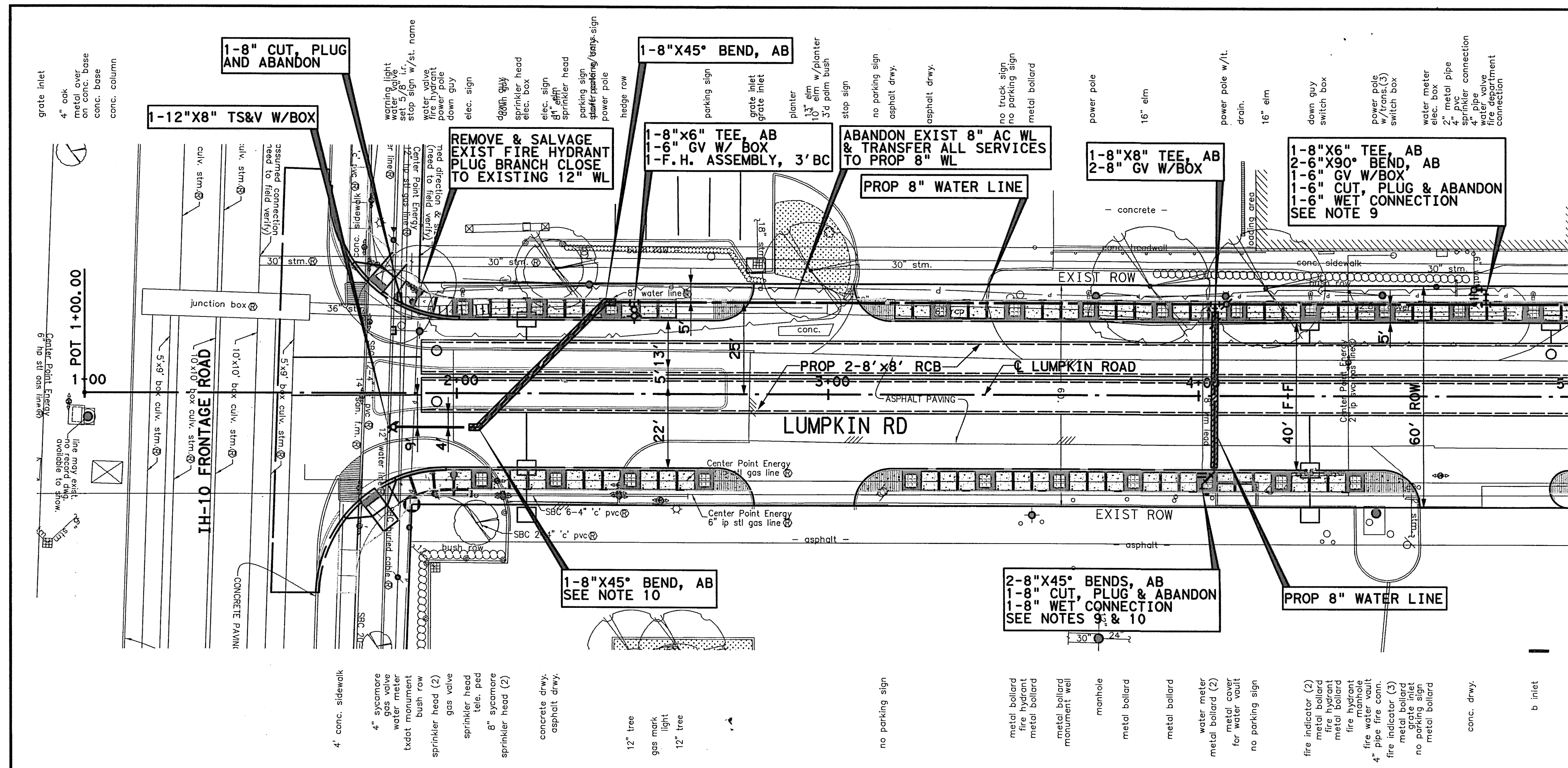
**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
STORM SEWER LATERALS

SHEET 12 OF 12  
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'		
HORZ: 1"=10'		
SHEET:		
94 OF 226		

8-36-51 AM 9/5/2014 9:52:00 AM \*STORM\*SWR\*LAT\*12.dgn



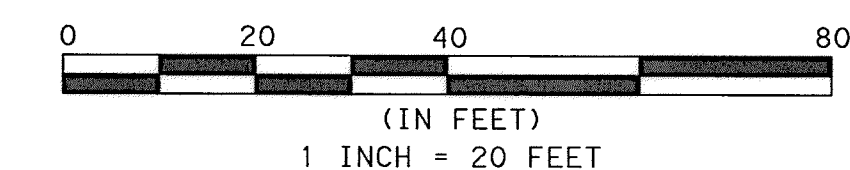
MATCHLINE STA 5+00 SEE SHT 2 OF 18

MATCHLINE STA 5+00 SEE SHT 2 OF 18

**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV. = 82.18 FEET (NAVD 88/GEOTD09)

T. B. M. #46  
 SET 5/2" I.R. LOCATED AT NORTHWEST  
 CORNER OF LUMPKIN RD. AND I-10  
 FRONTAGE ROAD INTERSECTION.  
 CL STA. 1+83.38, 23.46' LT.  
 ELEV. = 78.75'

- NOTES:**
1. MAINTAIN WATER SERVICES TO ALL CUSTOMERS, FIRE HYDRANTS, AND INTERCONNECTIONS. PROVIDE TEMPORARY CONNECTION AS NECESSARY FOR CONSTRUCTION.
  2. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.
  3. CAUTION-EXISTING 8" AC WATERLINE IN CLOSE PROXIMITY TO PROPOSED WORK MAY LEAK. NO SEPARATE PAYMENT FOR GROUNDWATER CONTROL RESULTING FROM LEAKING PIPE. AVOID DISTURBING EXISTING 8" AC WATERLINE.
  4. CRITICAL LOCATE EXISTING 8" AC WATERLINE AT 200 FT MAX SPACING. SEE SECTION 01110.
  5. CONTRACTOR TO BRACE POWER POLES WHEN 2 FOOT CLEARANCE CANNOT BE MAINTAINED.
  6. ALL CONNECTIONS TO EXISTING WATER LINES TO BE MADE WITHIN ROW LIMITS.
  7. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
  8. CONTRACTOR SHALL BRACE AND SUPPORT ALL BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
  9. CONTRACTOR TO LOCATE UNMETERED FIRE SERVICES AND RESTORE CONNECTIONS.
  10. SEE WATER & SANITARY CROSSING SHEETS.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

*Signature* 9/25/14  
 DATE  
 AT&T UTILITY LINES SHOWN  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*Signature* 10/7/14  
 DATE  
 CENTERPOINT ENERGY/NATURAL GAS  
 FACILITIES VERIFICATION ONLY  
 (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*Signature* 10/7/14  
 DATE  
 CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY.  
 (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

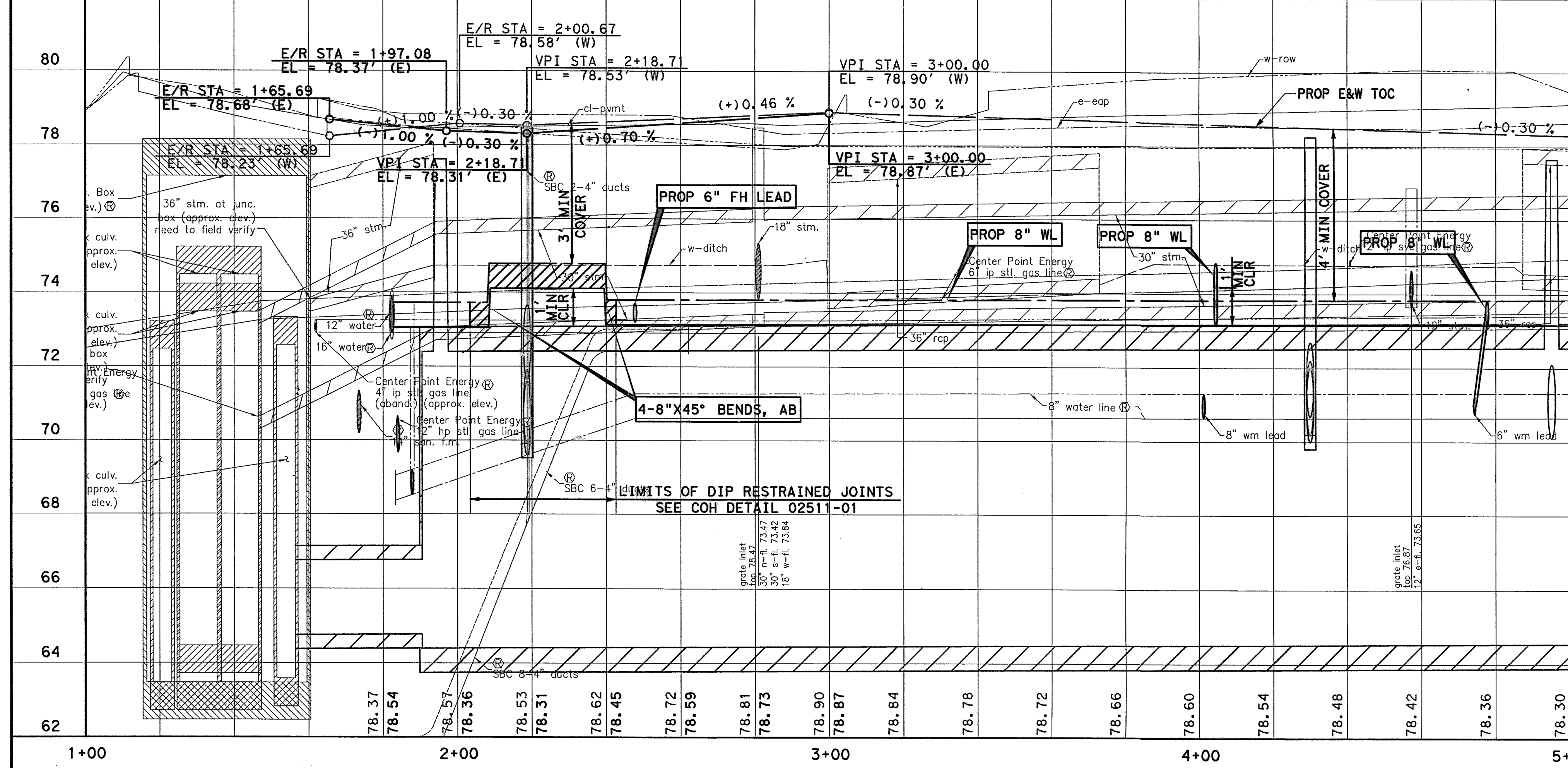
**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 PLAN VIEW  
 WATER & SAN SWR IMPROVEMENTS  
 BEGIN PROJECT TO 5+00  
 SHEET 1 OF 18

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

METER COUNTS	
ADDRESS	SIZE
1000 W SAM HOUSTON PKWY	2
1010 W SAM HOUSTON PKWY	1.5
1010 W SAM HOUSTON PKWY	2
1050 W SAM HOUSTON PKWY	1.5
1060 W SAM HOUSTON PKWY	2
1100 W SAM HOUSTON PKWY	1.5
10518 KATY FREEWAY	2



MATCHLINE STA 5+00 SEE SHT 2 OF 18

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 PLAN VIEW  
 WATER & SAN SWR IMPROVEMENTS  
 BEGIN PROJECT TO 5+00  
 SHEET 1 OF 18

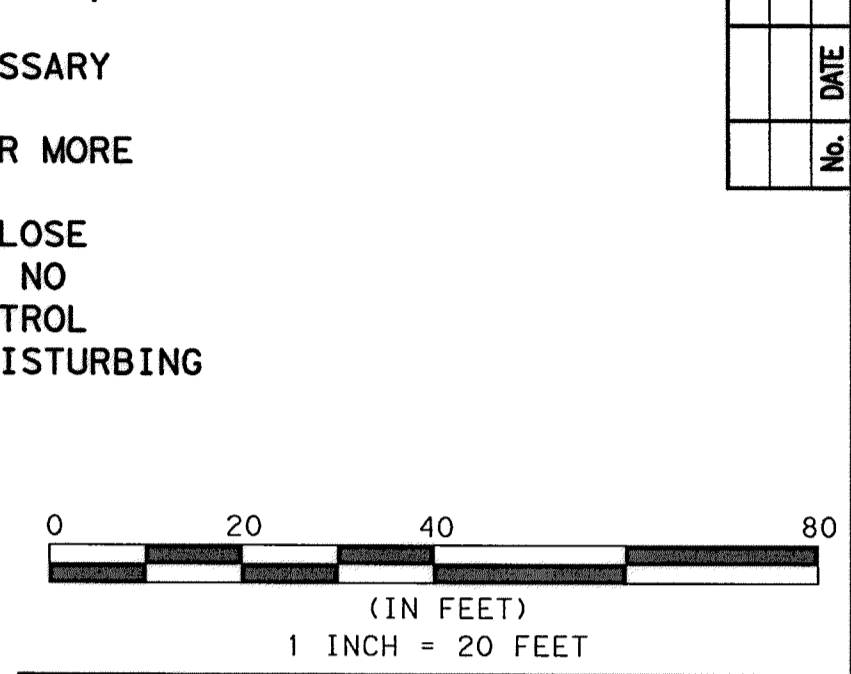
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'		
HORZ: 1"=20'		
SHEET:	95 OF 226	

**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV. = 82.18 FEET (NAVD 88/GEOD09)

T. B. M. #46  
 SET 1/2" I. R. LOCATED AT EAST SIDE  
 OF LUMPKIN ROAD.  
 APPROX. 622 FT NORTH OF LUMPKIN ROAD  
 AND 110 FT INTERSECTION.  
 D STA. 8+07.15, 24.86' RT.  
 ELEV. = 80.03'

- NOTES:**
1. MAINTAIN WATER SERVICES TO ALL CUSTOMERS, FIRE HYDRANTS, AND INTERCONNECTIONS. PROVIDE TEMPORARY CONNECTION AS NECESSARY FOR CONSTRUCTION.
  2. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.
  3. CAUTION-EXISTING 8" AC WATERLINE IN CLOSE PROXIMITY TO PROPOSED WORK MAY LEAK. NO SEPARATE PAYMENT FOR GROUNDWATER CONTROL RESULTING FROM LEAKING PIPE. AVOID DISTURBING EXISTING 8" AC WATERLINE.
  4. CRITICAL LOCATE EXISTING 8" AC WATERLINE AT 200 FT MAX SPACING. SEE SECTION 01110.
  5. CONTRACTOR TO BRACE POWER POLES WHEN 2 FOOT CLEARANCE CANNOT BE MAINTAINED.
  6. ALL CONNECTIONS TO EXISTING WATER LINES TO BE MADE WITHIN ROW LIMITS.
  7. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
  8. CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
  9. CONTRACTOR TO LOCATE UNMETERED FIRE SERVICES AND RESTORE CONNECTIONS.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

*Carroll* 9/25/14 DATE

**AT&T UTILITY LINES SHOWN** DATE

APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*Shannon* 10/7/14 DATE

**CENTERPOINT ENERGY/NATURAL GAS** DATE

FACILITIES VERIFICATION ONLY

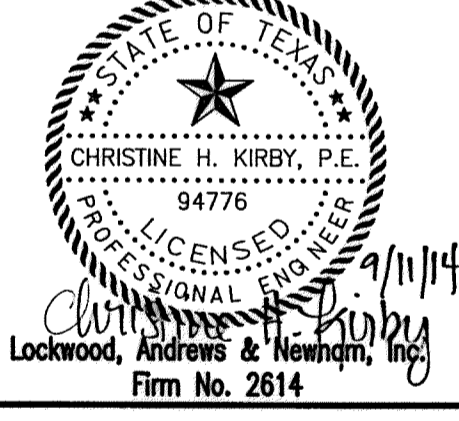
(THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN ONP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*Shannon* 10/7/14 DATE

**CENTERPOINT ENERGY/UNDERGROUND** DATE

FACILITIES VERIFICATION ONLY.

(THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



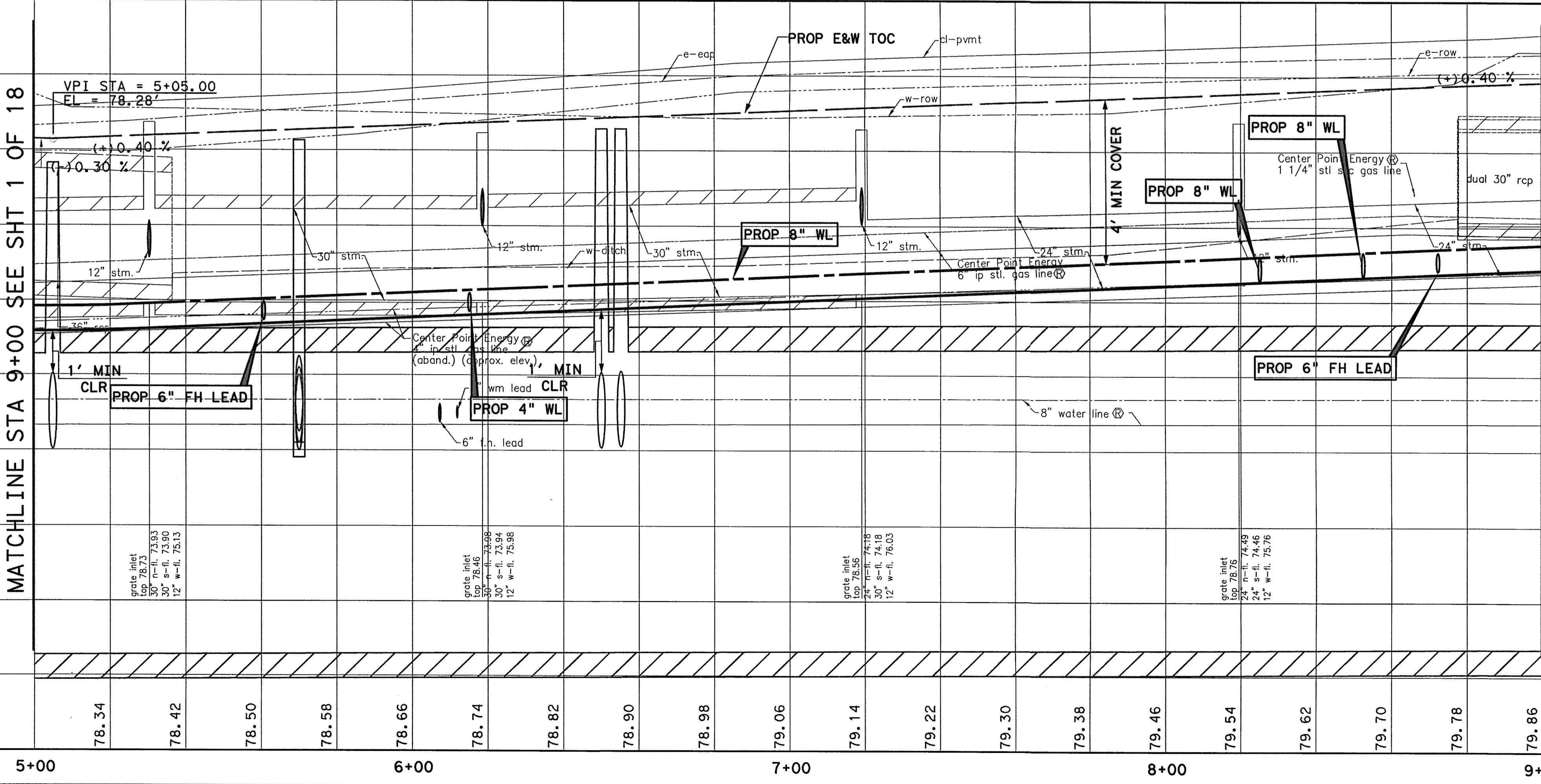
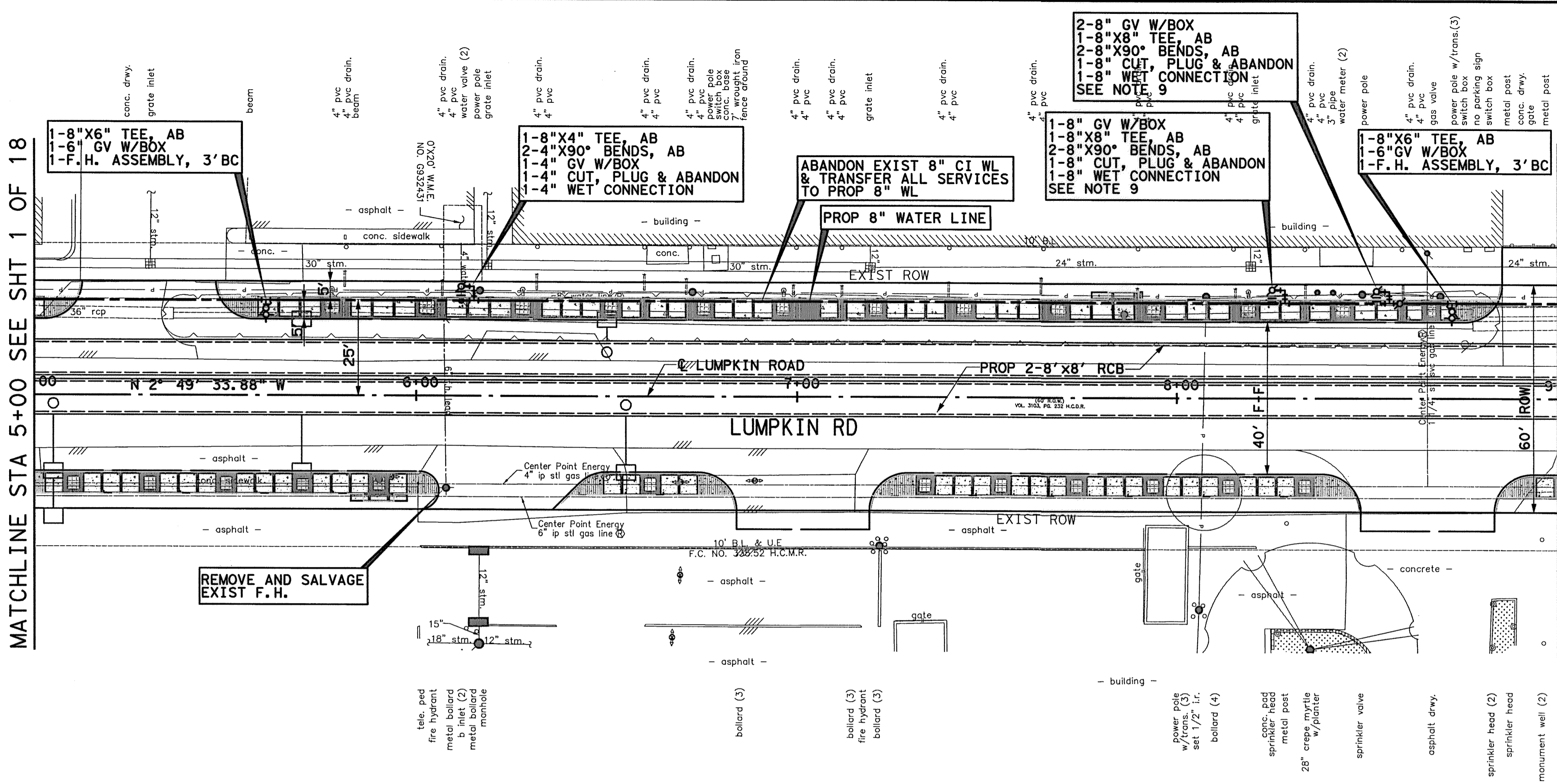
**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 PLAN VIEW  
 WATER & SAN SWR IMPROVEMENTS  
 STA 5+00 TO STA 9+00  
 SHEET 2 OF 18

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
	CITY DNG NO.	
DRAWING SCALE:		
VERT: 1"=2'		
HORZ: 1"=20'		
SHEET:	96 OF 226	



**METER COUNTS**

ADDRESS	SIZE
1100 LUMPKIN ROAD	2

MATCHLINE STA 5+00 SEE SHT 1 OF 18

MATCHLINE STA 9+00 SEE SHT 1 OF 18

MATCHLINE STA 9+00 SEE SHT 3 OF 18

MATCHLINE STA 9+00 SEE SHT 3 OF 18

5+00 6+00 7+00 8+00 9+00

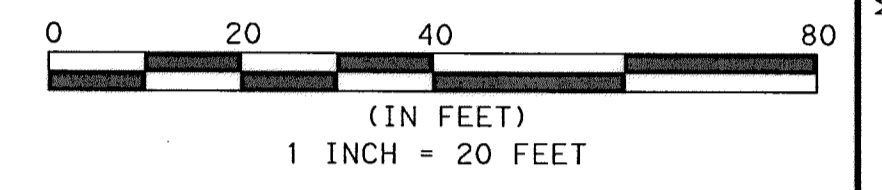


No.	DATE	REVISIONS	APP.

**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV. = 82.18 FEET (NAVD 88\GEOID09)

T.B.M. #44  
 SET 1/2" I.R. LOCATED WEST SIDE OF  
 LUMPKIN ROAD  
 APPROX. 587 FT SOUTH OF LUMPKIN  
 ROAD AND LARSTON DRIVE INTERSECTION.  
 D STA. 11+04.75, 40.32' LT  
 ELEV. = 80.32'

- NOTES:**
1. MAINTAIN WATER SERVICES TO ALL CUSTOMERS, FIRE HYDRANTS, AND INTERCONNECTIONS. PROVIDE TEMPORARY CONNECTION AS NECESSARY FOR CONSTRUCTION.
  2. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.
  3. CAUTION-EXISTING 8" AC WATERLINE IN CLOSE PROXIMITY TO PROPOSED WORK MAY LEAK. NO SEPARATE PAYMENT FOR GROUNDWATER CONTROL RESULTING FROM LEAKING PIPE. AVOID DISTURBING EXISTING 8" AC WATERLINE.
  4. CRITICAL LOCATE EXISTING 8" AC WATERLINE AT 200 FT MAX SPACING. SEE SECTION 0110.
  5. RECONNECT ALL EXIST SERVICES TO PROPOSED WATERLINE.
  6. CONTRACTOR TO BRACE POWER POLES WHEN 2 FOOT CLEARANCE CANNOT BE MAINTAINED.
  7. ALL CONNECTIONS TO EXISTING WATER LINES TO BE MADE WITHIN ROW LIMITS.
  8. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
  9. CONTRACTOR SHALL BRACE AND SUPPORT ALL BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

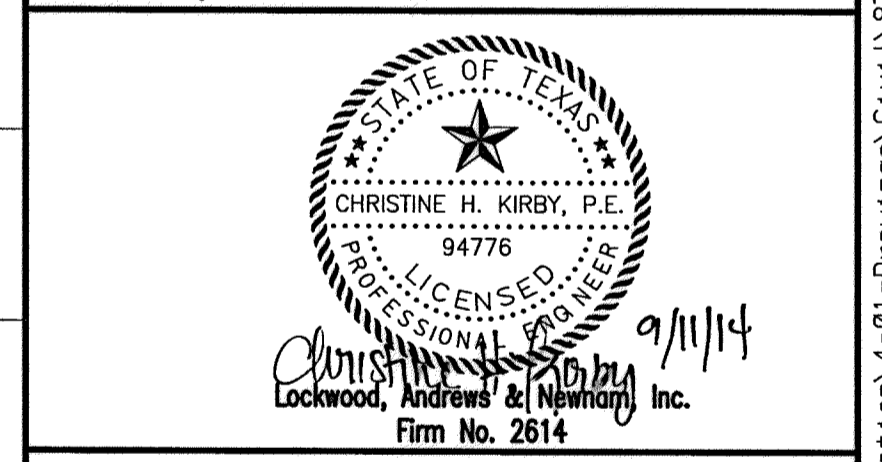
PRIVATE UTILITY LINES SHOWN

*Conrad* 9/25/14  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*Shannon* 10/7/14  
 CENTERPOINT ENERGY/NATURAL GAS DATE FACILITIES VERIFICATION ONLY  
 (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*Shannon* 10/7/14  
 CENTERPOINT ENERGY/UNDERGROUND DATE ELECTRICAL FACILITIES VERIFICATION ONLY.  
 (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

*Christine H. Kirby* 9/11/14  
 LICENSED PROFESSIONAL ENGINEER  
 CHRISTINE H. KIRBY, P.E.  
 94776  
 Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614



MEMORIAL CITY REDEVELOPMENT AUTHORITY

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 PLAN VIEW  
 WATER & SAN SWR IMPROVEMENTS  
 STA 9+00 TO STA 12+00  
 SHEET 3 OF 18

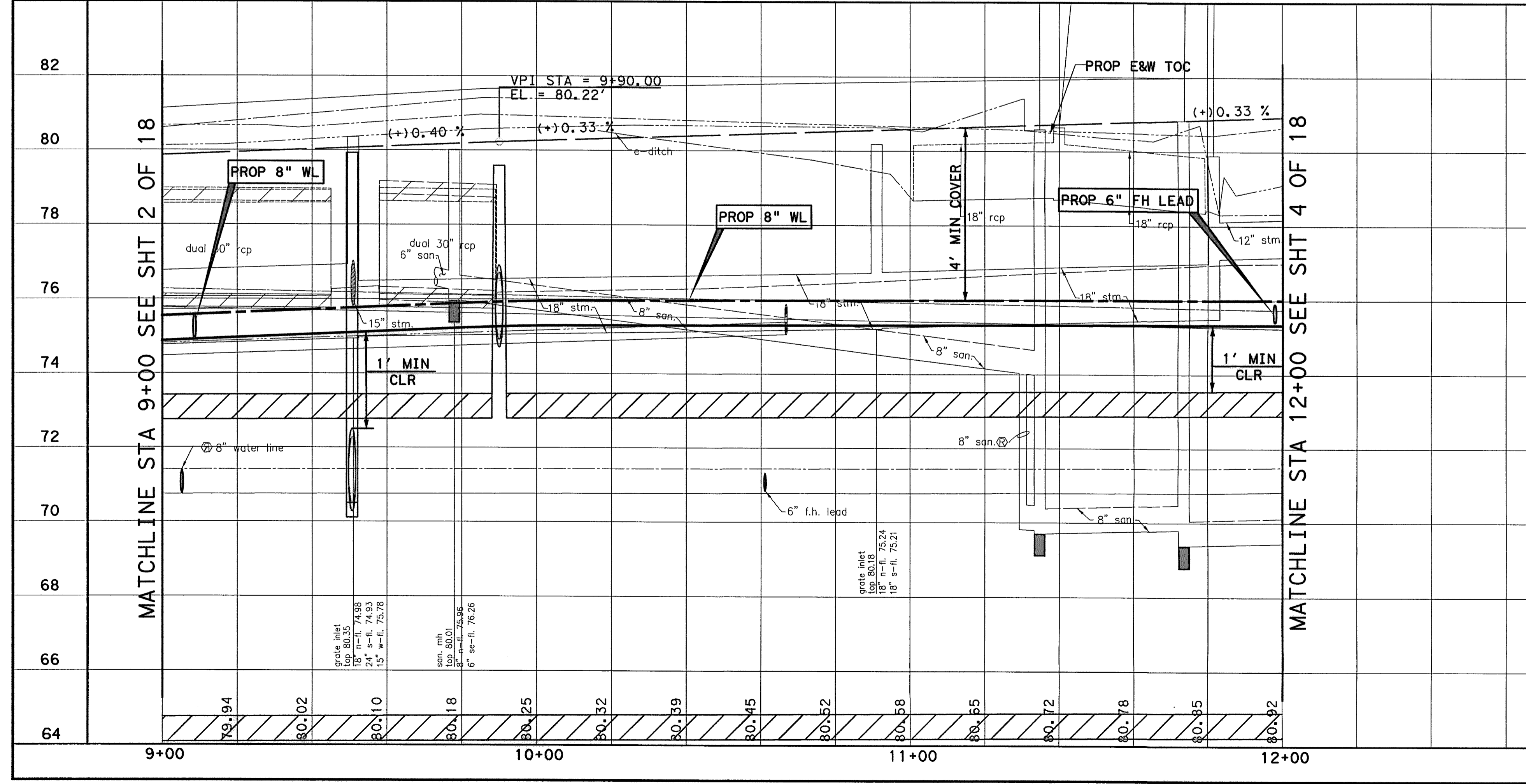
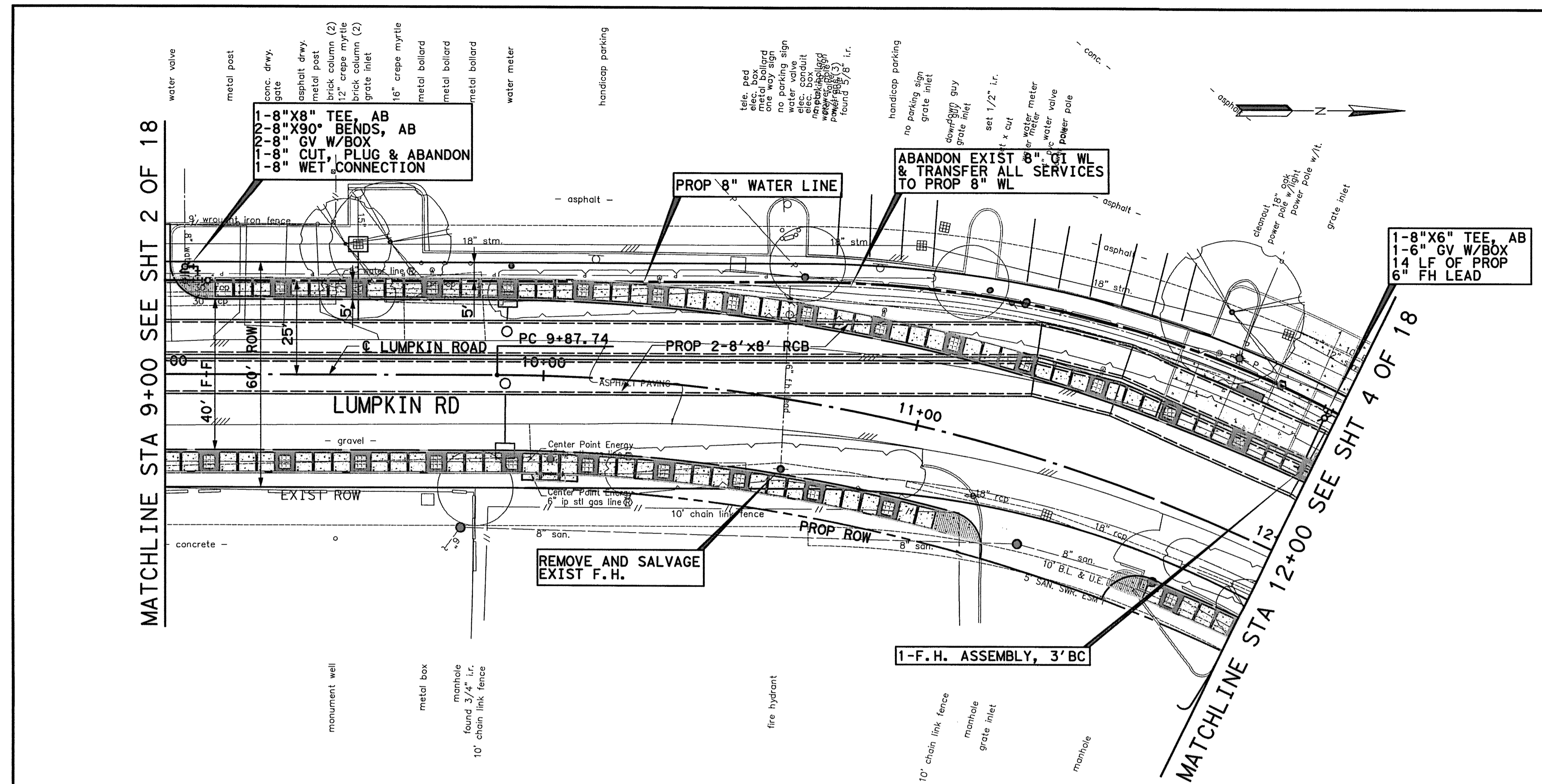
CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

FILE NO. : FACILITY

DRAWING SCALE: CITY DWS NO.

VERT: 1"=2'  
 HORZ: 1"=20'  
 SHEET: 97 OF 226

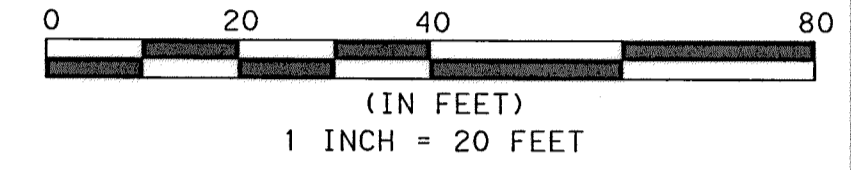


METER COUNTS		82
ADDRESS	SIZE	
1119 LUMPKIN ROAD	2	82

9/17/2014 3:15:46 PM  
 pw\1\adpw. ladbco. int\projectwise\Documents\Projects\130-10384-001\4-01-Drawings\Civil\187-001-P&P-WTR-03.dgn

**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET WEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV. = 82.18 FEET (NAVD 88\GEOID09)  
 T. B. M. #43  
 SET X CUT LOCATED WEST SIDE OF  
 LUMPKIN ROAD.  
 APPROX. 166 FT SOUTH OF LUMPKIN  
 ROAD AND LARSTON DRIVE INTERSECTION.  
 D STA. 15+08.09, 17.04' LT  
 ELEV. = 82.25'

- NOTES:**
1. MAINTAIN WATER SERVICES TO ALL CUSTOMERS, FIRE HYDRANTS, AND INTERCONNECTIONS. PROVIDE TEMPORARY CONNECTION AS NECESSARY FOR CONSTRUCTION.
  2. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.
  3. INSTALL PROPOSED 8" WATERLINE IN 16" DIA. CASING. SUPPORT CARRIER PIPE AT 5' INTERVALS AND FILL TO SPRINGLINE WITH WASHED SAND
  4. CAUTION-EXISTING 8" AC WATERLINE IN CLOSE PROXIMITY TO PROPOSED WORK MAY LEAK. NO SEPARATE PAYMENT FOR GROUNDWATER CONTROL RESULTING FROM LEAKING PIPE. AVOID DISTURBING EXISTING 8" AC WATERLINE.
  5. CRITICAL LOCATE EXISTING 8" AC WATERLINE AT 200 FT MAX SPACING. SEE SECTION 01110.
  6. RECONNECT ALL EXIST SERVICES TO PROPOSED WATERLINE.
  7. CONTRACTOR TO BRACE POWER POLES WHEN 2 FOOT CLEARANCE CANNOT BE MAINTAINED.
  8. ALL CONNECTIONS TO EXISTING WATER LINES TO BE MADE WITHIN ROW LIMITS.
  9. SEE WATER & SANITARY SEWER CROSSING SHEETS.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

*[Signature]* 9/25/14  
 AT&T UTILITY LINES SHOWN DATE  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*[Signature]* 10/7/14  
 CENTERPOINT ENERGY/NATURAL GAS DATE  
 FACILITIES VERIFICATION ONLY  
 (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*[Signature]* 10/7/14  
 CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL DATE  
 FACILITIES VERIFICATION ONLY.  
 (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



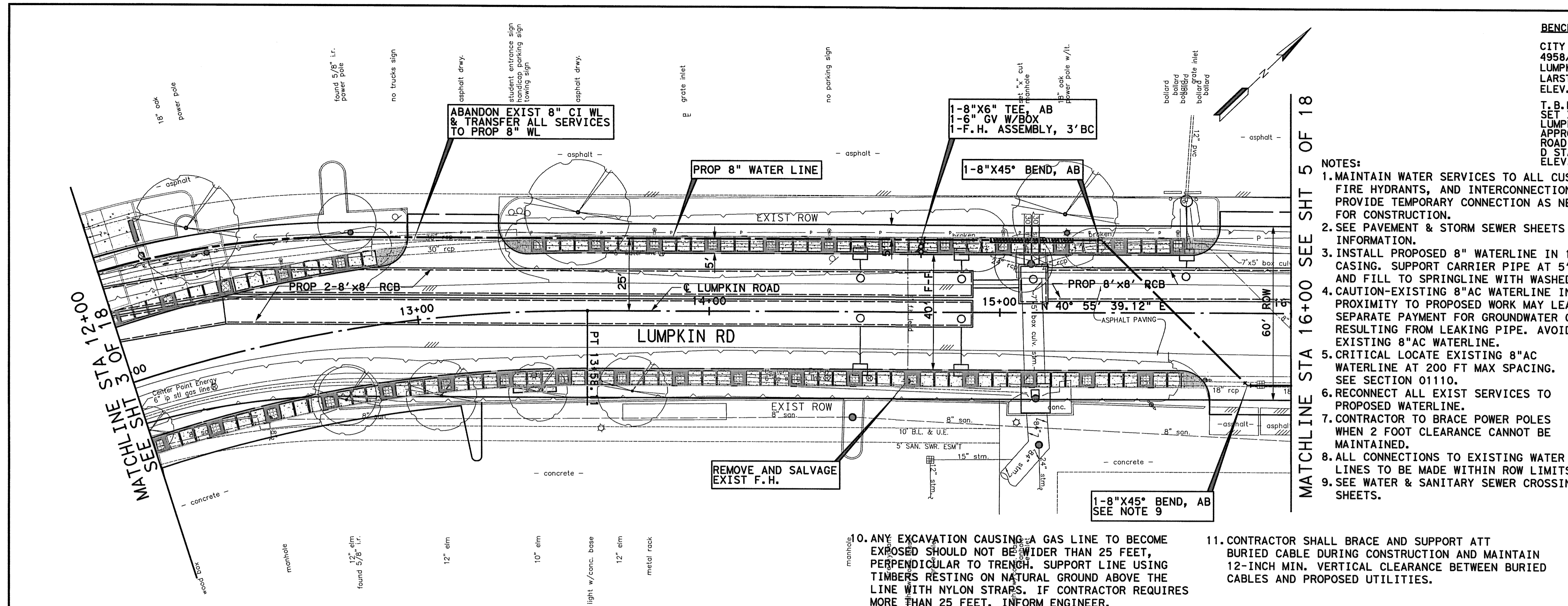
MEMORIAL CITY REDEVELOPMENT AUTHORITY

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

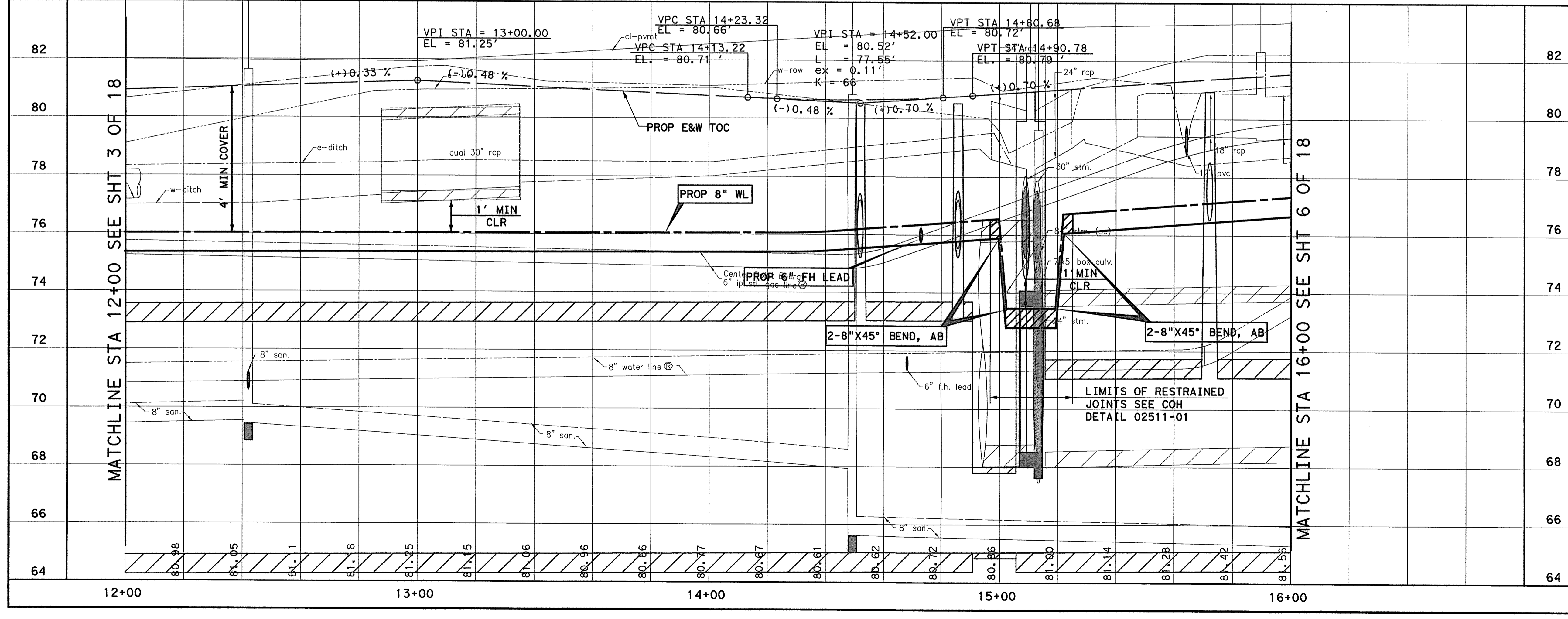
LUMPKIN ROAD  
 N-T17000-0012-3  
 PLAN VIEW  
 WATER & SAN SWR IMPROVEMENTS  
 STA 12+00 TO STA 16+00  
 SHEET 4 OF 18

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

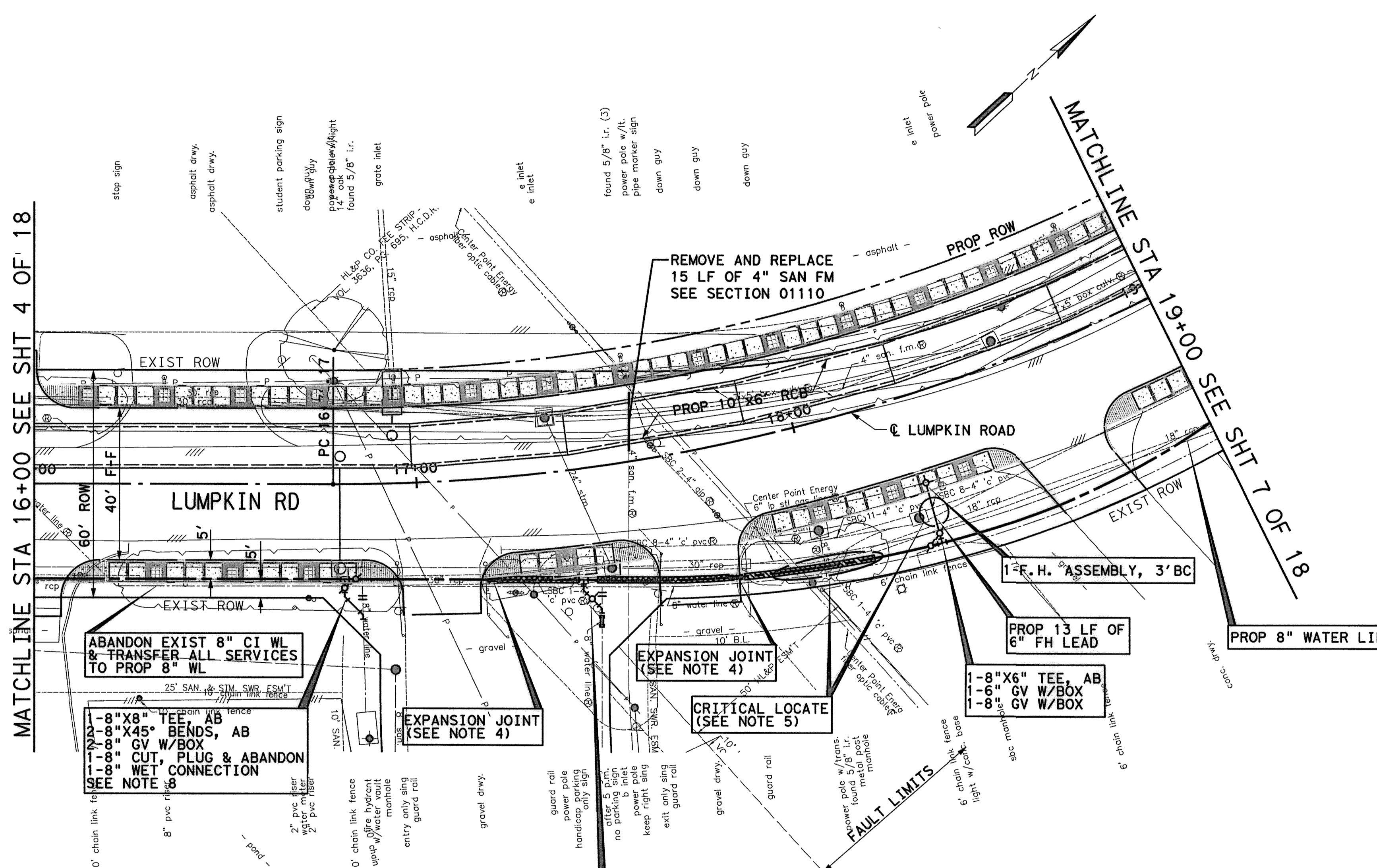
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'		
HORIZ: 1"=20'		
SHEET:	98 OF 226	



10. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
11. CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.



APP. REVISIONS No. DATE  
 3-16-05 PH  
 9/17/2014  
 88-001-P&E-WTR-04.dgn



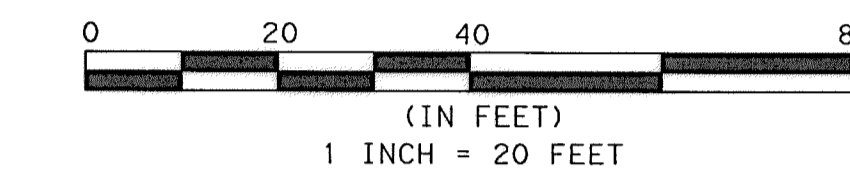
MATCHLINE STA 16+00 SEE SHT 4 OF 18

MATCHLINE STA 19+00 SEE SHT 7 OF 18

SEE PROFILE VIEW SHEET 6 OF 18

**BENCHMARK:**  
CITY OF HOUSTON SURVEY MARKER STAMPED  
4958/7710 LOCATED AT EAST SIDE OF  
LUMPKIN RD., 110 FEET SOUTHWEST OF  
LARSTON DR. INTERSECTION IN KEYMAP 449Z  
ELEV.=82.18 FEET (NAVD 88\GEOID09)

**T. B. M. #42**  
SET 1/2" I. R. LOCATED EAST SIDE OF  
LUMPKIN ROAD.  
APPROX. 361 FT SOUTH OF LUMPKIN ROAD  
AND WESTVIEW DRIVE INTERSECTION.  
D STA. 19+50.97, 26.24' RT.  
ELEV.=85.17'



**NOTES:**

1. MAINTAIN WATER SERVICES TO ALL CUSTOMERS, FIRE HYDRANTS, AND INTERCONNECTIONS. PROVIDE TEMPORARY CONNECTION AS NECESSARY FOR CONSTRUCTION.
2. REMOVE AND REPLACE MH FRAME AND COVER AND ADJUST TO NEW GRADE, SEE DETAILS
3. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.
4. INSTALL 8-INCH WATER LINE BETWEEN THE PROPOSED EXPANSION JOINTS AT STATION 17+18 AND 17+77 USING DUCTILE IRON PIPE, PRESSURE CLASS 350 PSI, WITH INTEGRAL RESTRAINED JOINTS. PROVIDE EBAA IRON DOUBLE-BALL FLEX-TEND FORCE BALANCED FLEXIBLE EXPANSION JOINTS OR APPROVED EQUAL. INSTALL TWO WRAPS OF 4-MIL HDPE WRAP AROUND EXPANSION JOINTS IN ACCORDANCE WITH AWWA C105. LIMITS OF PAYMENT WILL BE BETWEEN STATION 17+18 AND 17+77, BETWEEN THE PROPOSED EXPANSION JOINTS.
5. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
6. CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
7. VERIFY LOCATION OF EXISTING 8-INCH WATER LINE. IF CONFLICT IS FOUND, UTILIZE LINSTOP ON EXISTING 8-INCH WATER LINE TO ALLOW INSTALLATION OF PROPOSED 8-INCH WATER LINE.
8. CONTRACTOR TO LOCATE UNMETERED FIRE SERVICES AND RESTORE CONNECTIONS.

○ CRITICAL LOCATE  
SEE SPEC 02317

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINE CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

*Lockwood, Andrews & Newnam, Inc.* 9-25-14  
DATE: 9-25-14  
AT&T UTILITY LINES SHOWN APPROVED FOR AT&T/SWIFT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*Lockwood, Andrews & Newnam, Inc.* 10/2/14  
DATE: 10/2/14  
CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*Lockwood, Andrews & Newnam, Inc.* 10/7/14  
DATE: 10/7/14  
CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

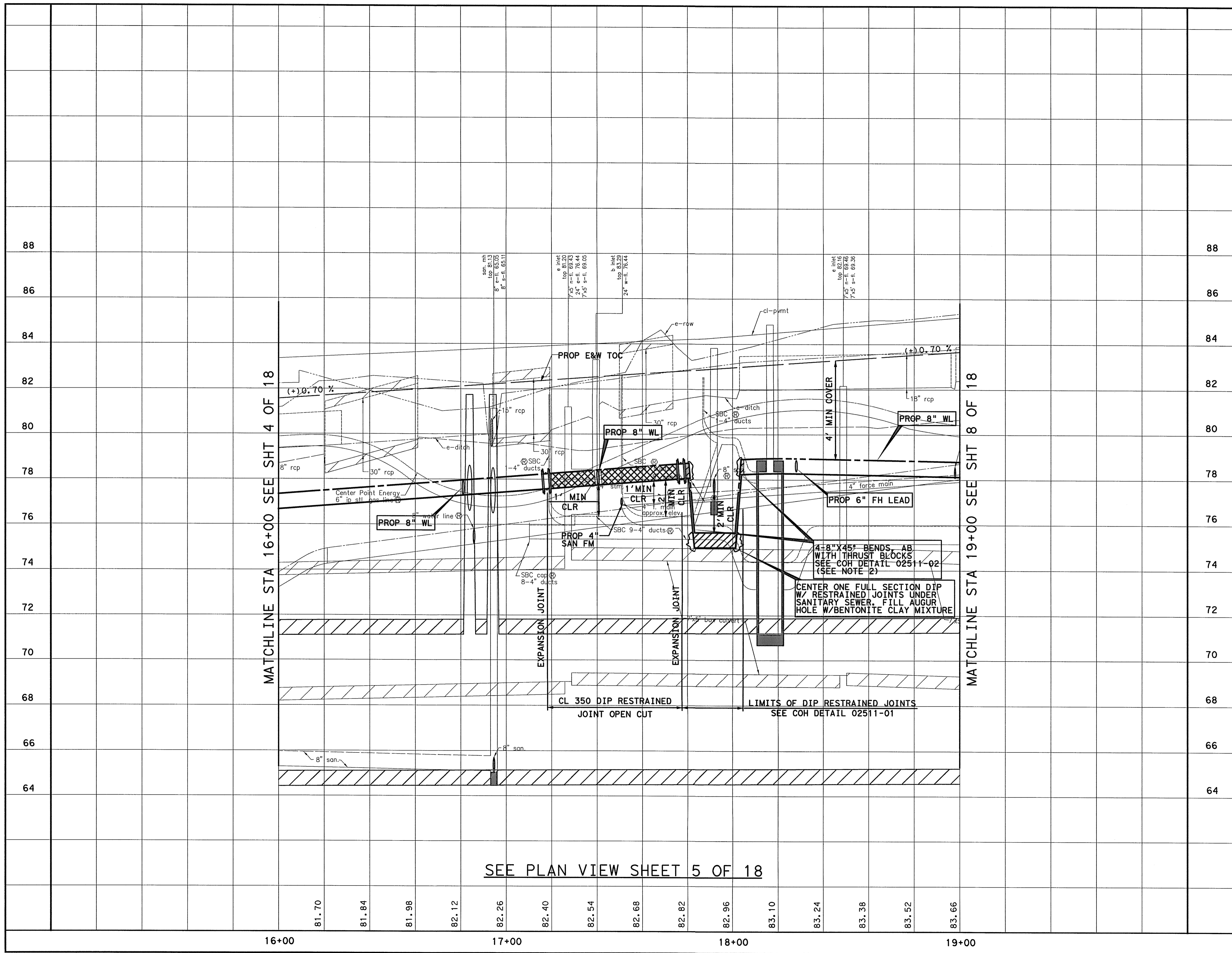


LUMPKIN ROAD  
N-T17000-0012-3  
PLAN VIEW  
WATER & SAN SWR IMPROVEMENTS  
STA 16+00 TO STA 19+00  
SHEET 5 OF 18

**CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING**

FILE NO.:	FACILITY
WATER	WASTEWATER TRAFFIC
ST. & BRIDGE	STORMWATER SWG
DRAWING SCALE:	CITY DWG NO.
VERT: 1"=2'	
HORZ: 1"=20'	
SHEET:	
99 OF 226	

REVISIONS  
No. DATE  
APP.  
M\Guthrie  
9-29-15 BKH  
9/11/2014  
pwr\tdpaw.tadob.int\proj\etw\se\Documents\Projects\130-10384-001\4-0-Products\on\4-01-Drawings\C\d\1\89-001-rp-r-wtr-05.dgn



**NOTE:**  
 1. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.  
 2. NO SEPARATE PAY FOR THRUST BLOCKS.

0 20 40 80  
 (IN FEET)  
 1 INCH = 20 FEET

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

*J. Corant* 9-25-14 DATE  
 AT&T/UTILITY LINES SHOWN APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*H. Hamner* 10/2/14 DATE  
 CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*H. Hamner* 10/7/14 DATE  
 CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

CHRISTINE H. KIRBY, P.E.  
 94776  
 LICENSED PROFESSIONAL ENGINEER  
 STATE OF TEXAS  
 Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY

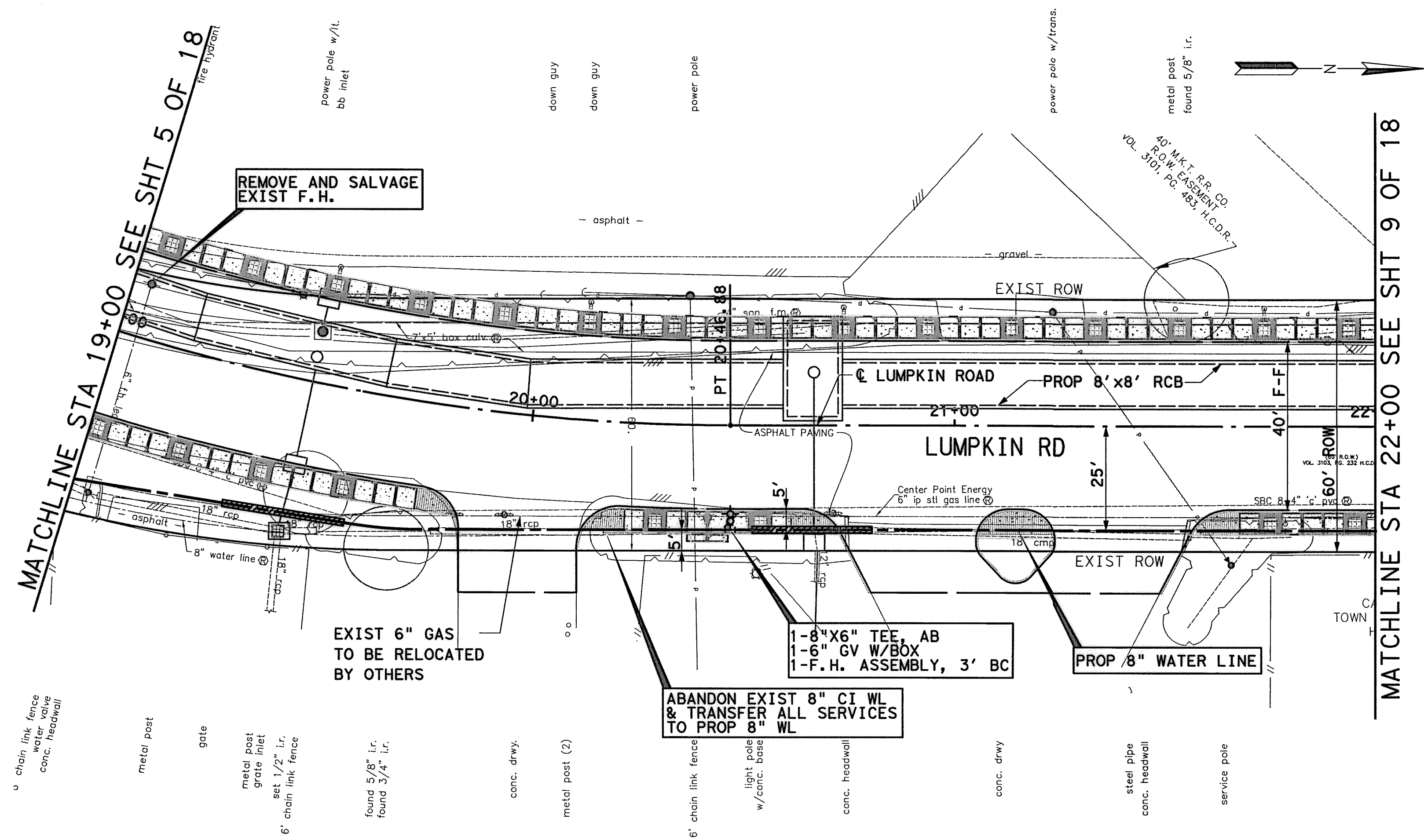
**LAN** Lockwood, Andrews & Newnam, Inc.  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 PROFILE VIEW  
 WATER & SAN SWR IMPROVEMENTS  
 STA 16+00 TO STA 19+00  
 SHEET 6 OF 18

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'		
HORZ: 1"=20'		
SHEET:	100 OF 226	

p:\11\ladpw.ladoc.int\proj\ctw\ees\Documents\Projects\130-10384-001\4-0-P-Product\con\4-01-Drawings\Civ\1190-001-28-P-WTR-06.dgn 9/17/2014 3:16:23 PM MuGuthrie



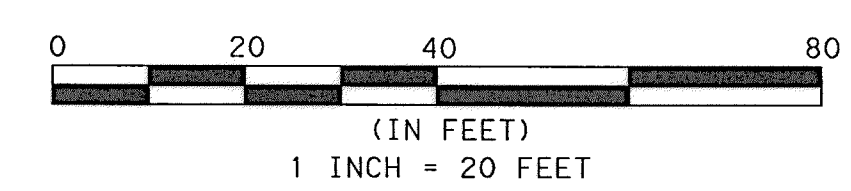
SEE PROFILE VIEW SHEET 8 OF 18

METER COUNTS	
ADDRESS	SIZE
1123 LUMPKIN ROAD	1.5

- NOTES:
1. MAINTAIN WATER SERVICES TO ALL CUSTOMERS, FIRE HYDRANTS, AND INTERCONNECTIONS. PROVIDE TEMPORARY CONNECTION AS NECESSARY FOR CONSTRUCTION.
  2. REMOVE AND REPLACE MH FRAME AND COVER AND ADJUST TO NEW GRADE, SEE DETAILS
  3. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.
  4. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
  5. CONTRACTOR SHALL BRACE AND SUPPORT ALL BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
  6. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
  7. CONTRACTOR SHALL BRACE AND SUPPORT ALL BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.

**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV. = 82.18 FEET (NAVD 88\GEOID09)

T. B. M. #42  
 SET 1/2" I.R. LOCATED EAST SIDE OF LUMPKIN ROAD. APPROX. 361 FT SOUTH OF LUMPKIN ROAD AND WESTVIEW DRIVE INTERSECTION. D STA. 19+50.97, 26.24' RT. ELEV. = 85.17'



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

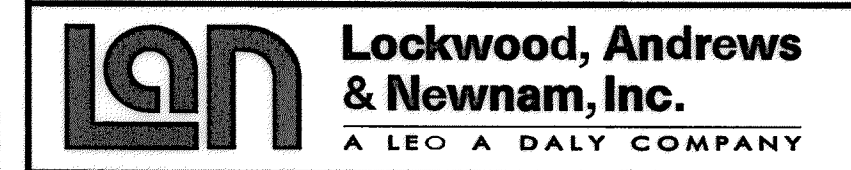
AT&T UTILITY LINES SHOWN DATE 7-25-14  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

CENTERPOINT ENERGY/NATURAL GAS DATE 10/2/14  
 FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

CENTERPOINT ENERGY/UNDERGROUND DATE 10/2/14  
 ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**



LUMPKIN ROAD  
 N-T17000-0012-3  
 PLAN VIEW  
 WATER & SAN SWR IMPROVEMENTS  
 STA 19+00 TO STA 22+00  
 SHEET 7 OF 18

**CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING**

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO. 1 FACILITY

DRAWING SCALE: CITY DWG. NO.

VERT: 1"=2'  
 HORZ: 1"=20'

SHEET: 101 OF 226

APP. REVISIONS No. DATE No. DATE  
 M0authr1e 9/11/2014 9:40:16 AM  
 Pw\1\edpw.ladco.int\projectwise\Documents\Projects\130-10284-001\4-0-0-Production\4-01-Drawings\Civil\91-001-F&P-WTR-07.dgn

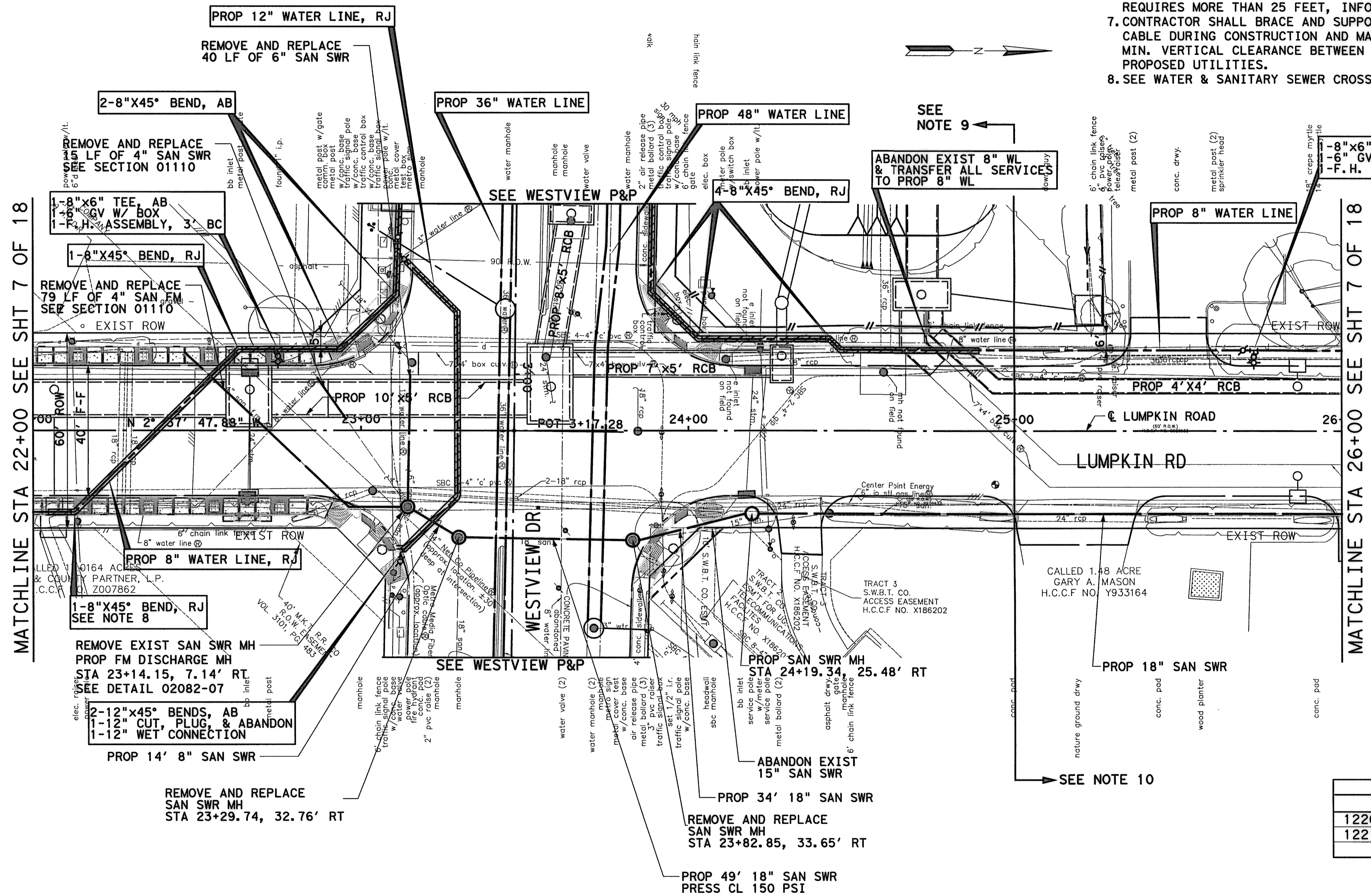


NO.	DATE	REVISIONS

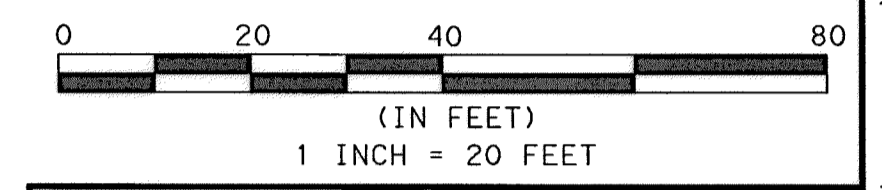
- NOTES:**
1. MAINTAIN WATER SERVICES TO ALL CUSTOMERS, FIRE HYDRANTS, AND INTERCONNECTIONS. PROVIDE TEMPORARY CONNECTION AS NECESSARY FOR CONSTRUCTION.
  2. REMOVE AND REPLACE MH FRAME AND COVER AND ADJUST TO NEW GRADE, SEE DETAILS.
  3. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.
  4. RECONNECT ALL EXIST SERVICES TO PROP SAN SWR.
  5. RECONNECT ALL EXIST LATERALS TO PROP SAN SWR MH.
  6. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
  7. CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
  8. SEE WATER & SANITARY SEWER CROSSING SHEETS.

**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV. =82.18 FEET (NAVD 88\GEOID09)

T. B. M. #41  
 SET 1/2" I. R. LOCATED NORTHEAST CORNER OF LUMPKIN ROAD AND WESTVIEW DRIVE INTERSECTION. D STA. 23+93.54, 31.79' RT. ELEV. =85.29'



9. END PROPOSED BASE BID ITEMS (SEE SPECIFICATION 01110 FOR DETAILS).
10. BEGIN PROPOSED ALTERNATE BID ITEMS (SEE SPECIFICATION 01110 FOR DETAILS).



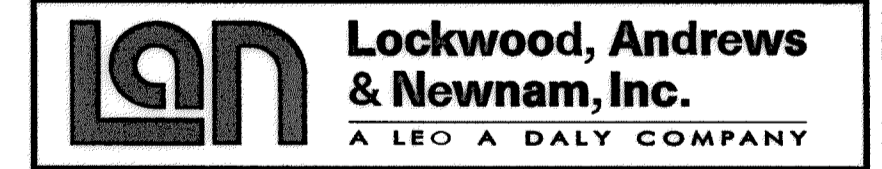
TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINE CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN	
AT&T/UTILITY LINES SHOWN	DATE 9/25/14
APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR	
CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY	DATE 10/7/14
(THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.	
CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY	DATE 10/7/14
(THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.	



MEMORIAL CITY REDEVELOPMENT AUTHORITY



LUMPKIN ROAD  
 N-117000-0012-3  
 PLAN VIEW  
 WATER & SAN SWR IMPROVEMENTS  
 STA 22+00 TO STA 26+00  
 SHEET 9 OF 18

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

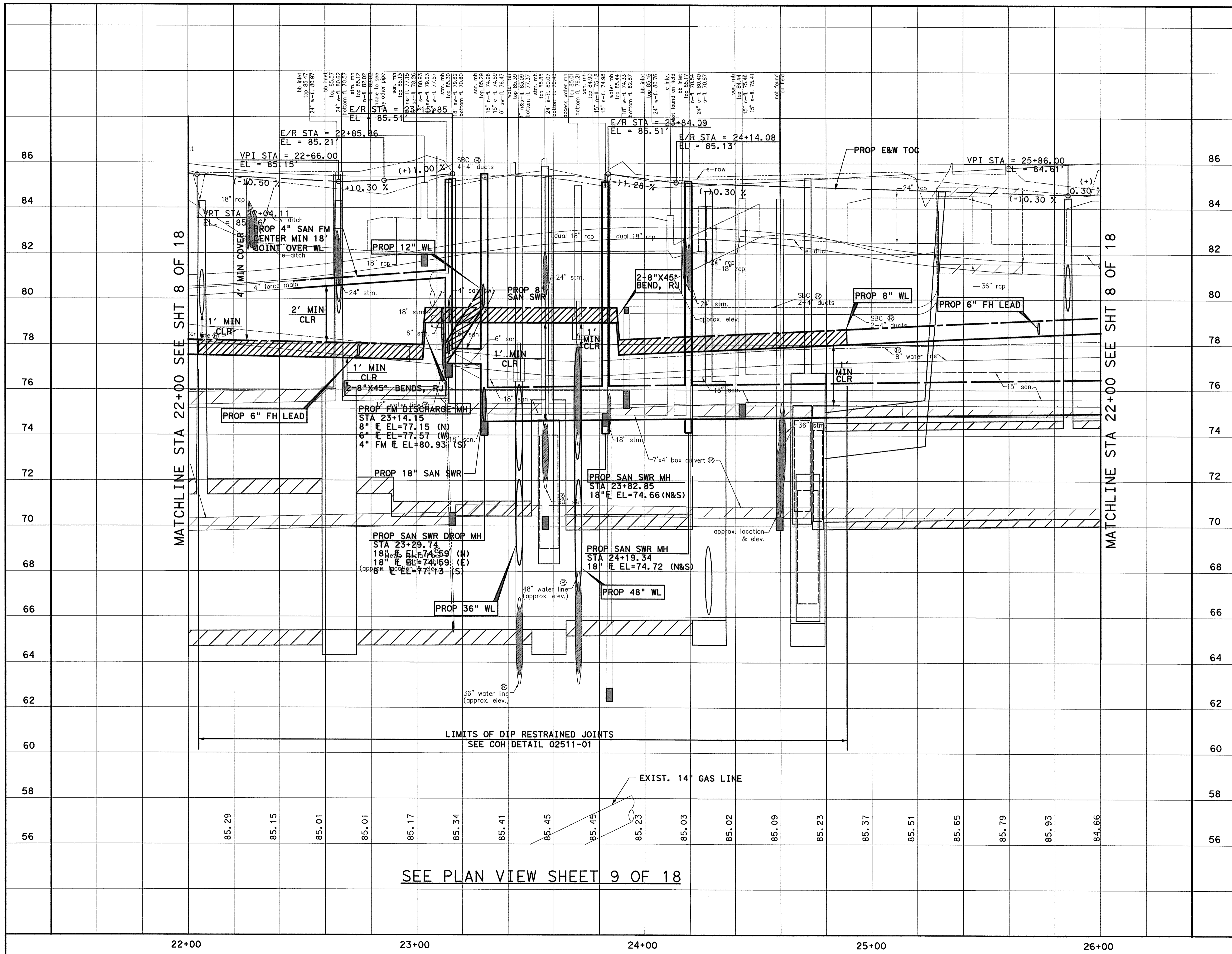
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DNG NO.	
VERT: 1"=2'		
HORIZ: 1"=20'		
SHEET:		
103 OF 226		

MATCHLINE STA 22+00 SEE SHT 7 OF 18

MATCHLINE STA 26+00 SEE SHT 7 OF 18

SEE PROFILE VIEW SHEET 10 OF 18

METER COUNTS	
ADDRESS	SIZE
1220 LUMPKIN ROAD	2
1221 LUMPKIN ROAD	1



SEE PLAN VIEW SHEET 9 OF 18

**NOTE:**  
1. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.

0 20 40 80  
(IN FEET)  
1 INCH = 20 FEET

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222


**NOTICE:**  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

*[Signature]* 9-25-14 DATE  
AT&T UTILITY LINES SHOWN APPROVED FOR AT&T/SWGT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*[Signature]* 10/1/14 DATE  
CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*[Signature]* 10/1/14 DATE  
CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEQ A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
PROFILE VIEW  
WATER & SAN SWR IMPROVEMENTS  
STA 22+00 TO STA 26+00  
SHEET 10 OF 18

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO. 1 FACILITY

DRAWING SCALE: CITY DWG. NO.

VERT: 1"=2'  
HORIZ: 1"=20'

SHEET: 104 OF 226

APP. REVISIONS No. DATE

9/17/2014 9:16:57 PM MjGuthrie

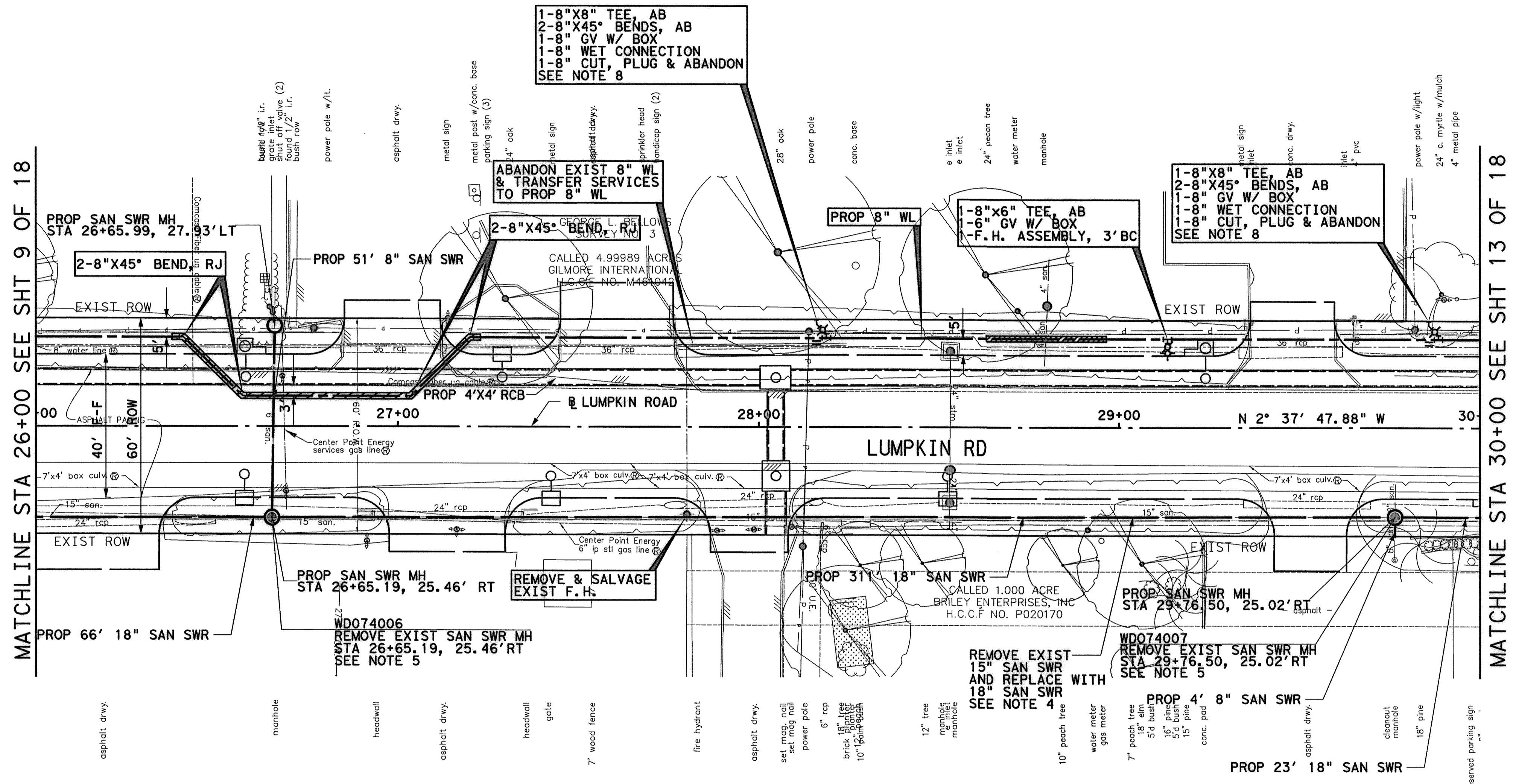
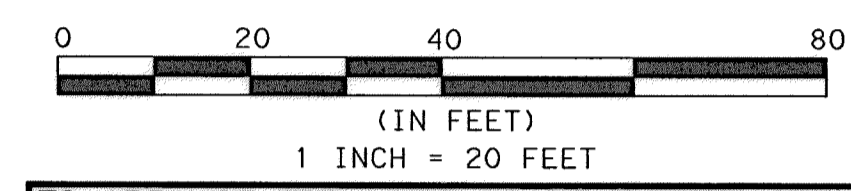
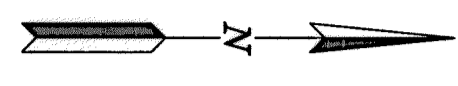
9/17/2014 9:16:57 PM WTR-1.0.dgn



**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV.=82.18 FEET (NAVD 88\GEOID09)

T.B.M. #40  
 SET MAG NAIL LOCATED EAST SIDE  
 OF LUMPKIN ROAD.  
 APPROX. 418 FT NORTH OF LUMPKIN  
 ROAD AND WESTVIEW DRIVE INTERSECTION.  
 D STA. 28+08.56, 18.18' RT.  
 ELEV.=86.39'

No.	DATE	REVISIONS



MATCHLINE STA 26+00 SEE SHT 9 OF 18

MATCHLINE STA 30+00 SEE SHT 13 OF 18

SEE PROFILE VIEW SHEET 12 OF 18

METER COUNTS		
ADDRESS	SIZE	
1230 LUMPKIN ROAD	1	
1231 LUMPKIN ROAD	2	
1251 LUMPKIN ROAD	1.5	

- NOTES:**
1. MAINTAIN WATER SERVICES TO ALL CUSTOMERS, FIRE HYDRANTS, AND INTERCONNECTIONS. PROVIDE TEMPORARY CONNECTION AS NECESSARY FOR CONSTRUCTION.
  2. REMOVE AND REPLACE MH FRAME AND COVER AND ADJUST TO NEW GRADE, SEE DETAILS
  3. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.
  4. RECONNECT ALL EXIST SERVICES TO PROP SAN SWR.
  5. RECONNECT ALL EXIST LATERALS TO PROP SAN SWR MH.
  6. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
  7. CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
  8. CONTRACTOR TO LOCATE UNMETERED FIRE SERVICES AND RESTORE CONNECTIONS.

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

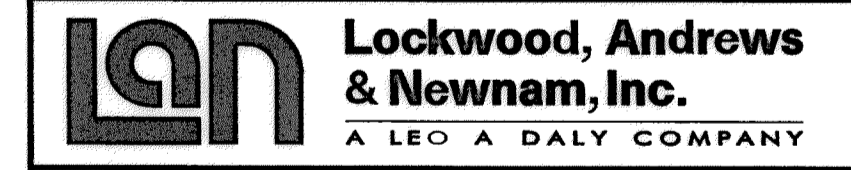
*Cawart* 9/25/14  
 AT&T UTILITY LINES SHOWN DATE  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*Hammer* 10/7/14  
 CENTERPOINT ENERGY/NATURAL GAS DATE  
 FACILITIES VERIFICATION ONLY  
 (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*Hammer* 10/7/14  
 CENTERPOINT ENERGY/UNDERGROUND DATE  
 ELECTRICAL FACILITIES VERIFICATION ONLY.  
 (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

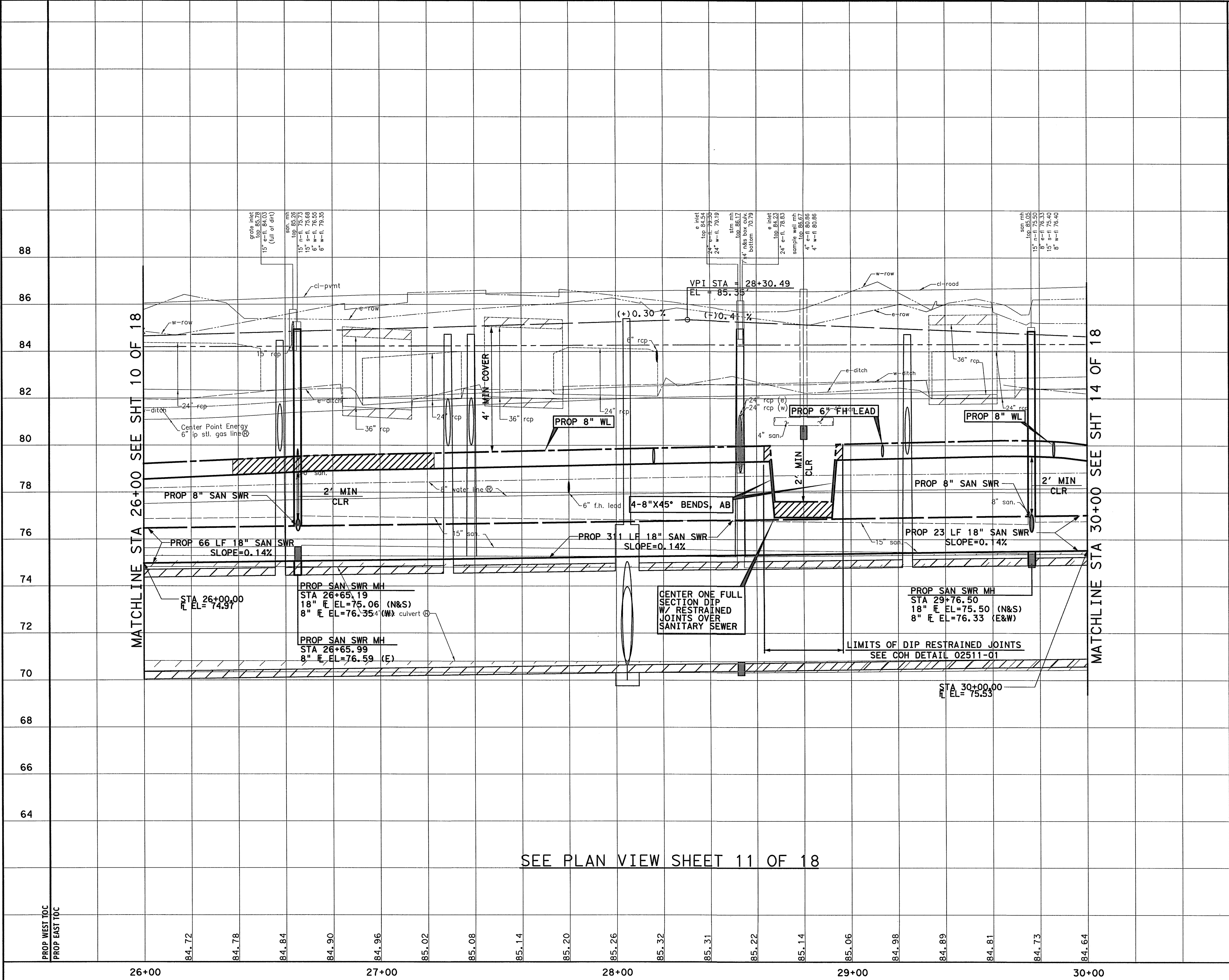


LUMPKIN ROAD  
 N-T17000-0012-3  
 PLAN VIEW  
 WATER & SAN SWR IMPROVEMENTS  
 STA 26+00 TO STA 30+00  
 SHEET 11 OF 18

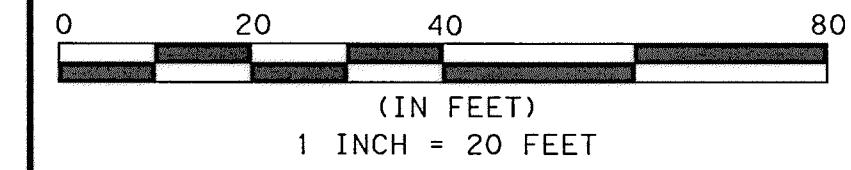
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DNG NO.
VERT: 1"=2'		
HORZ: 1"=20'		
SHEET:		
105 OF 226		

M:\1\adpw. lsdco. int\proj\wise\Documents\Projects\130-10384-001\4-0-Product\on\4-01-Drawings\Civil\130-001-F&P-WTR-11.dgn 9/11/2014 9:40:53 AM MJDuth-1e



NOTE:  
1. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

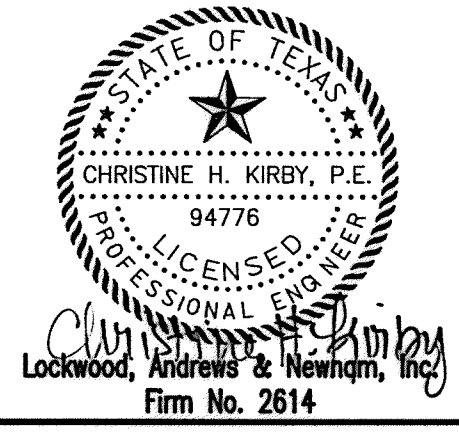
NOTICE:  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINE CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

*Christine H. Kirby* 9-25-14 DATE  
AT&T UTILITY LINES SHOWN APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*Christine H. Kirby* 10/2/14 DATE  
CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*Christine H. Kirby* 10/2/14 DATE  
CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



MEMORIAL CITY REDEVELOPMENT AUTHORITY



LUMPKIN ROAD  
N-T17000-0012-3  
PROFILE VIEW  
WATER & SAN SWR IMPROVEMENTS  
STA 26+00 TO STA 30+00  
SHEET 12 OF 18

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'		
HORIZ: 1"=20'		
SHEET:	106 OF 226	

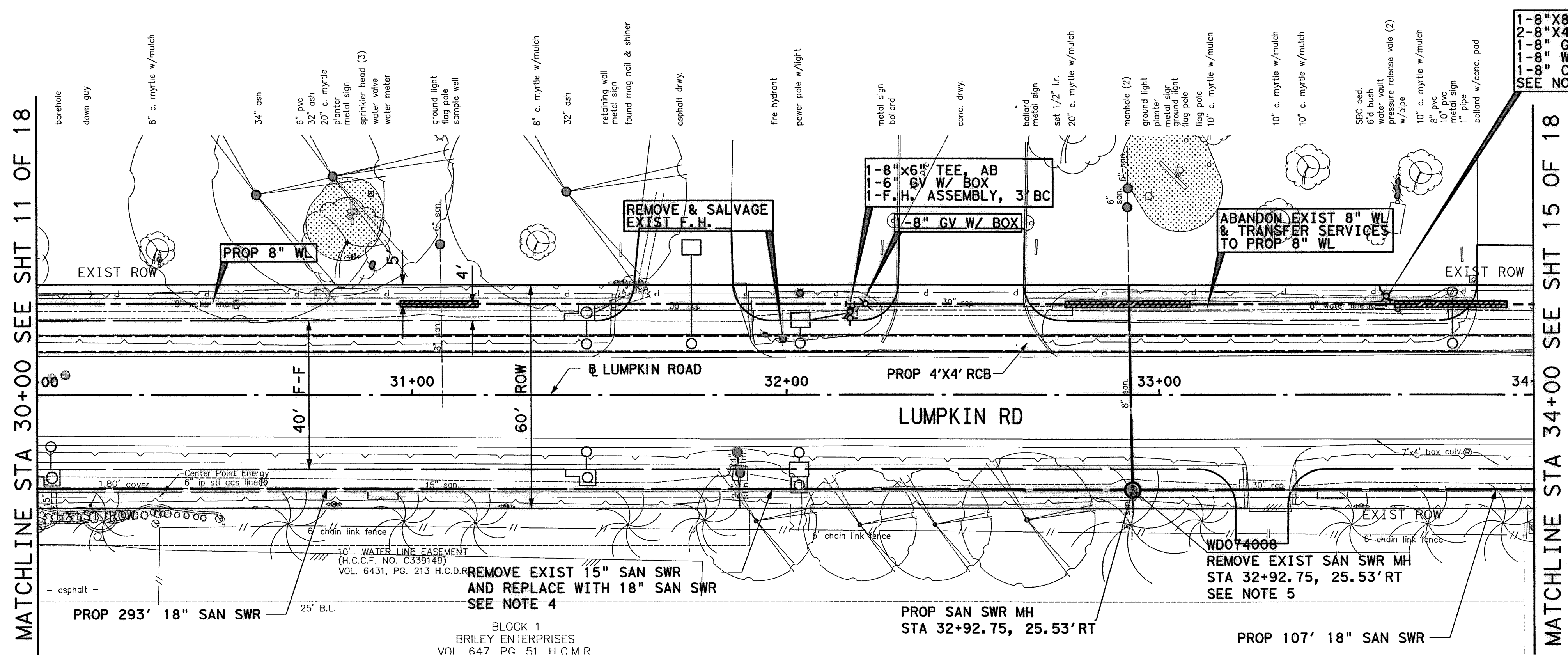
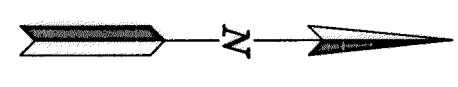
SEE PLAN VIEW SHEET 11 OF 18

APP. REVISIONS No. DATE No. DATE  
 9/17/2014 3:17:15 PM  
 9/17/2014  
 pw\l\adpw. l\adco. l\ntj\proj\ctw\ise\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\Civil\96-001-F&P-WTR-12.dgn

APP.	
REVISIONS	
No.	DATE

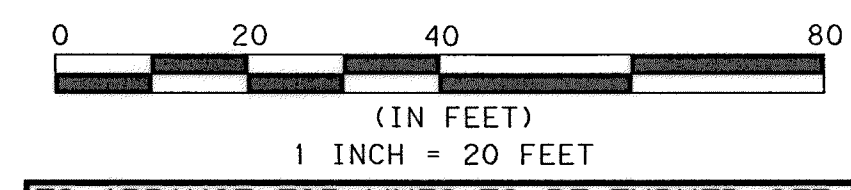
**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV. = 82.18 FEET (NAVD 88\GEOID09)

T. B. M. #52  
 SET 1/2" I.R. LOCATED WEST SIDE  
 OF LUMPKIN ROAD.  
 APPROX. 466 FT NORTH OF LUMPKIN ROAD  
 AND NORTHBROOK DRIVE INTERSECTION.  
 D STA. 32+76.49, 11.77' LT.  
 ELEV. = 86.60'



MATCHLINE STA 30+00 SEE SHT 11 OF 18

MATCHLINE STA 34+00 SEE SHT 15 OF 18



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

*Signature* 9/25/14  
 AT&T UTILITY LINES SHOWN DATE  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*Signature* 10/7/14  
 CENTERPOINT ENERGY/NATURAL GAS DATE  
 FACILITIES VERIFICATION ONLY  
 (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*Signature* 10/7/14  
 CENTERPOINT ENERGY/UNDERGROUND DATE  
 ELECTRICAL FACILITIES VERIFICATION ONLY.  
 (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



MEMORIAL CITY  
 REDEVELOPMENT AUTHORITY



LUMPKIN ROAD  
 N-T17000-0012-3  
 PLAN VIEW  
 WATER & SAN SWR IMPROVEMENTS  
 STA 30+00 TO STA 34+00  
 SHEET 13 OF 18

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

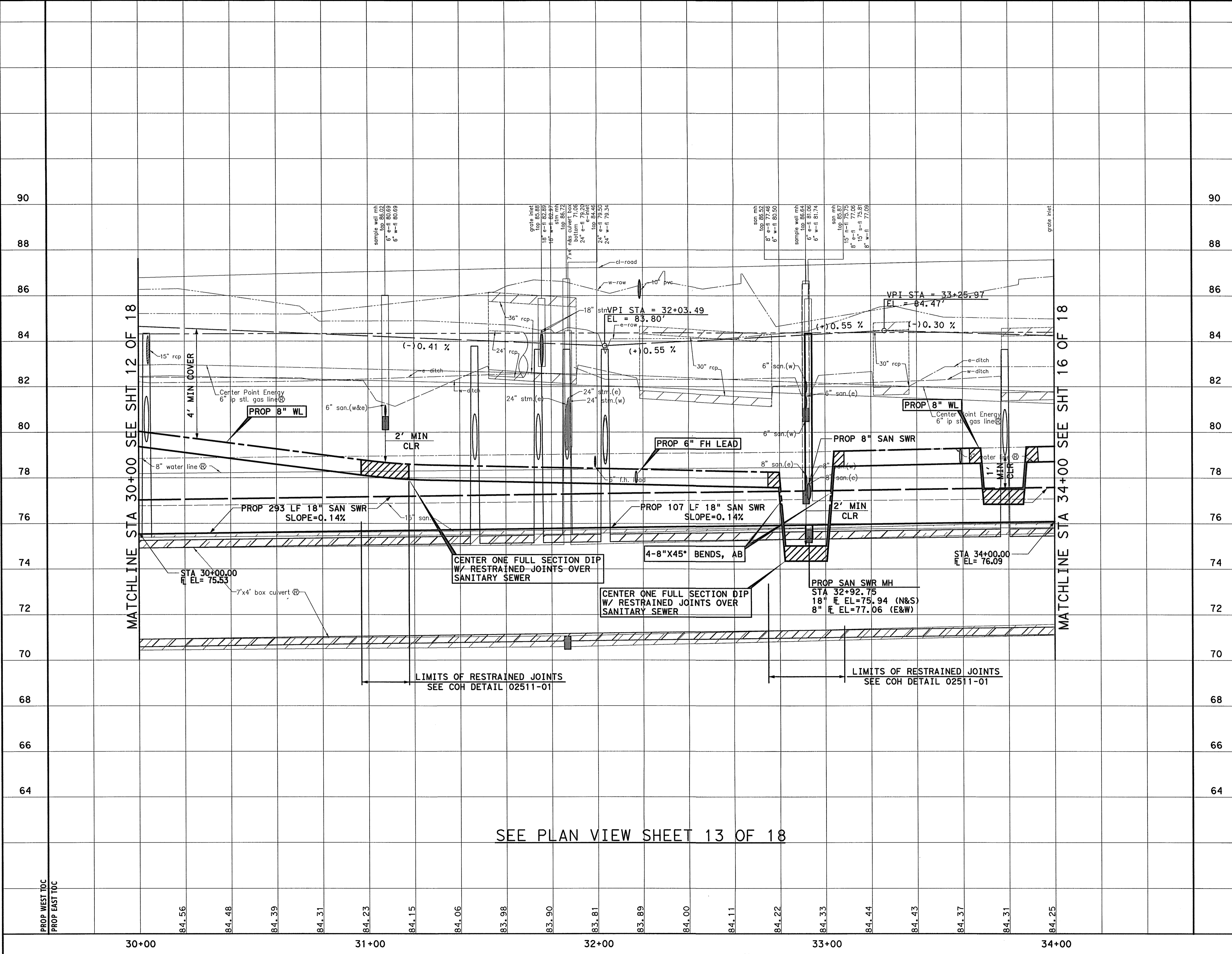
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'		
HORZ: 1"=20'		
SHEET:	107 OF 226	

- NOTES:**
1. MAINTAIN WATER SERVICES TO ALL CUSTOMERS, FIRE HYDRANTS, AND INTERCONNECTIONS. PROVIDE TEMPORARY CONNECTION AS NECESSARY FOR CONSTRUCTION.
  2. REMOVE AND REPLACE MH FRAME AND COVER AND ADJUST TO NEW GRADE, SEE DETAILS
  3. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.
  4. RECONNECT ALL EXIST SERVICES TO PROP SAN SWR.
  5. RECONNECT ALL EXIST LATERALS TO PROP SAN SWR MH.
  6. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
  7. CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
  8. CONTRACTOR TO LOCATE UNMETERED FIRE SERVICES AND RESTORE CONNECTIONS.

SEE PROFILE VIEW SHEET 14 OF 18

- 2 maple
- 3'd bush row
- reserved parking sign
- 14' pine
- 1" tree
- 2'd bush (2)
- 1'd bush (typ.)
- 1" pecan tree
- 17" pine
- 14" pine
- 14" pine
- 15" pine
- 15" pine
- manhole
- 16" oak
- 15" elm
- 15" elm
- 18" elm
- 27" birch manhole
- 12" pine
- asphalt drwy. fence gate
- 15" pine
- 18" pine
- 18" pine
- pressure release valve

p:\1\adpw.ladco.int\proj\ctw\use\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\Civil\137-001-F&P-WTR-13.dgn 9/11/2014 9:41:13 AM MCButhrie



**NOTE:**  
1. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.

REVISIONS  
No. DATE

0 20 40 80  
(IN FEET)  
1 INCH = 20 FEET

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222


**NOTICE:**  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

*Lawant* 9/25/14 DATE  
AT&T/UTILITY LINES SHOWN APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*Shannon* 10/7/14 DATE  
CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*Shannon* 10/7/14 DATE  
CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

 9/11/14  
Lockwood, Andrews & Newnam, Inc.  
Firm No. 2814

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
PROFILE VIEW  
WATER & SAN SWR IMPROVEMENTS  
STA 30+00 TO STA 34+00  
SHEET 14 OF 18

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

FILE NO. : FACILITY

DRAWING SCALE: CITY DWG NO.

VERT: 1"=2'  
HORZ: 1"=20'

SHEET: 108 OF 226

30+00 31+00 32+00 33+00 34+00

PROF WEST TOC  
PROF EAST TOC

84.56 84.48 84.39 84.31 84.23 84.15 84.06 83.98 83.90 83.81 83.89 84.00 84.11 84.22 84.33 84.44 84.43 84.37 84.31 84.25

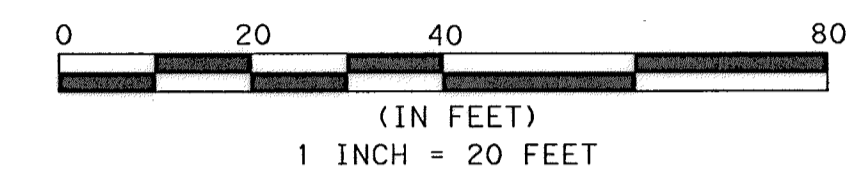
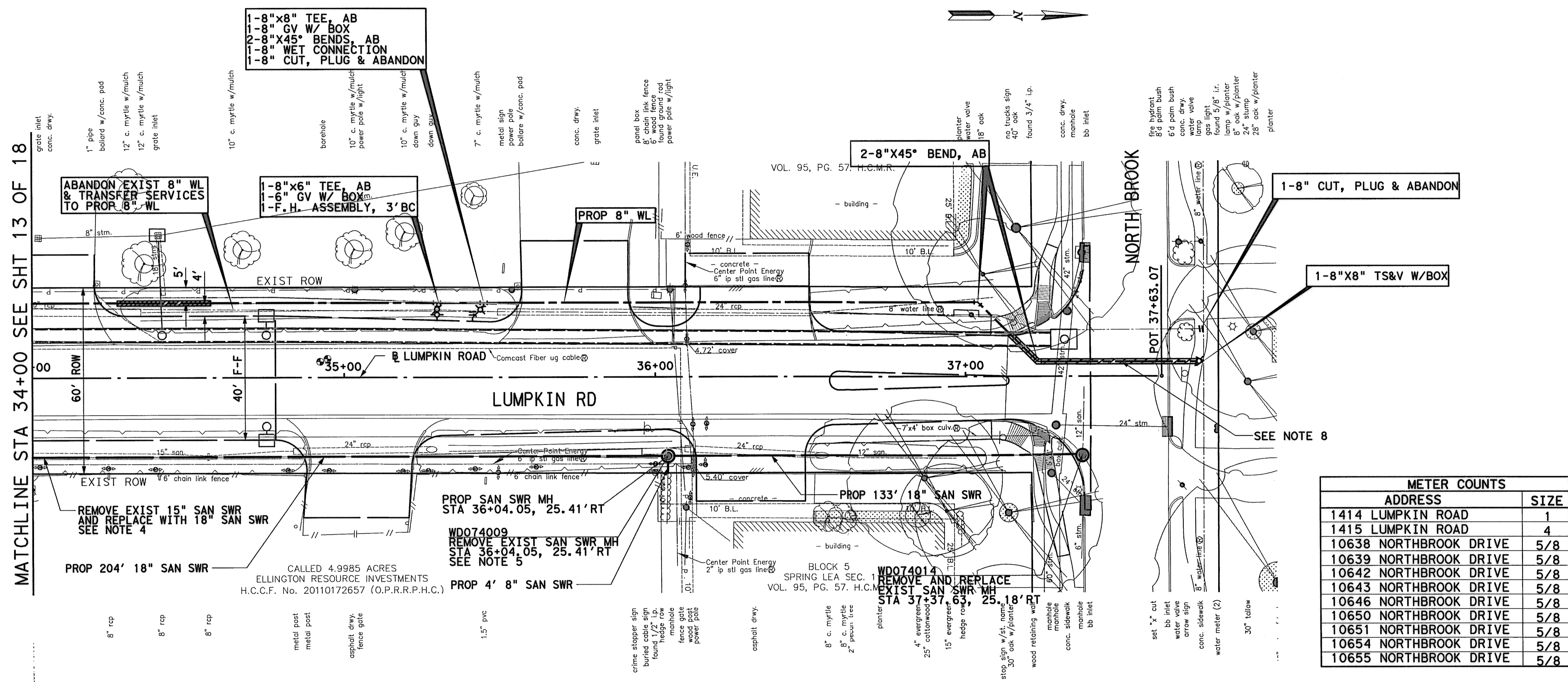
SEE PLAN VIEW SHEET 13 OF 18

McGuthrie  
3-17-34 PM  
9/17/2014  
9/11/14  
P:\proj\laddw. laddco. int\proj\wise\Documents\Projects\130-10384-001\4-0-Product\ton\4-01-Drawings\Civil\130-98-001-R&P-WTR-14.dgn

**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV.=82.18 FEET (NAVD 88\GEOID09)

T. B. M. #53  
 SET "X" LOCATED NORTH SIDE OF LUMPKIN  
 ROAD AND NORTHBROOK DRIVE INTERSECTION.  
 D STA. 37+59.36, 0.22' RT.  
 ELEV.=85.72'

No.	DATE	REVISIONS



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**

*[Signature]* 9/25/14 DATE  
 AT&T UTILITY LINES SHOWN APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*[Signature]* 10/7/14 DATE  
 CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*[Signature]* 10/7/14 DATE  
 CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**



**LUMPKIN ROAD**  
 N-T17000-0012-3  
 PLAN VIEW  
 WATER & SAN SWR IMPROVEMENTS  
 STA 34+00 TO END PROJECT  
 SHEET 15 OF 18

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

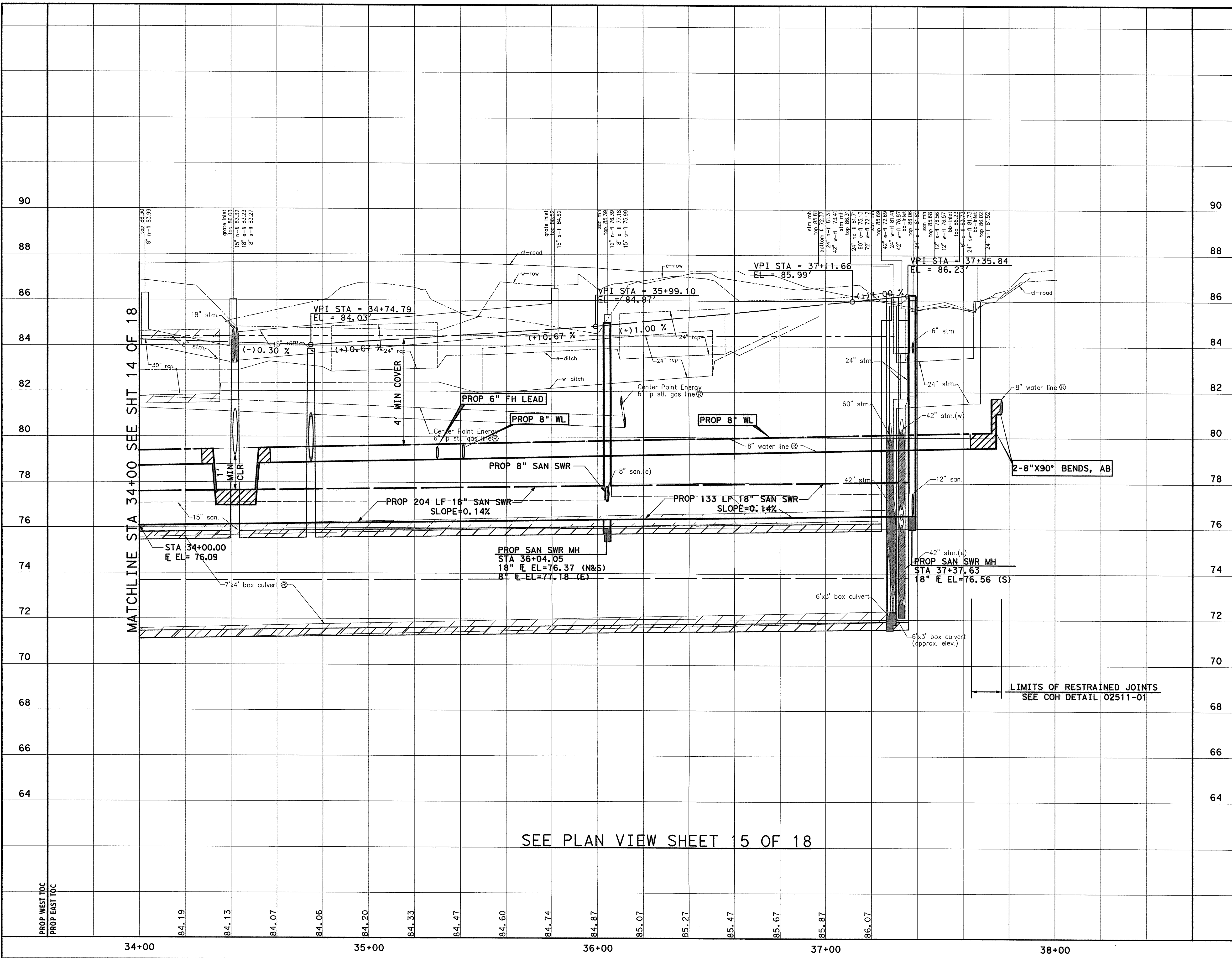
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'		
HORZ: 1"=20'		
SHEET:		
109 OF 226		

- NOTES:**
1. MAINTAIN WATER SERVICES TO ALL CUSTOMERS, FIRE HYDRANTS, AND INTERCONNECTIONS. PROVIDE TEMPORARY CONNECTION AS NECESSARY FOR CONSTRUCTION.
  2. REMOVE AND REPLACE MH FRAME AND COVER AND ADJUST TO NEW GRADE, SEE DETAILS
  3. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.
  4. RECONNECT ALL EXIST SERVICES TO PROP SAN SWR.
  5. RECONNECT ALL EXIST LATERALS TO PROP SAN SWR MH.
  6. ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
  7. CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
  8. USE TRENCHLESS METHODS TO CROSS NORTHBROOK.

**SEE PROFILE VIEW SHEET 16 OF 18**

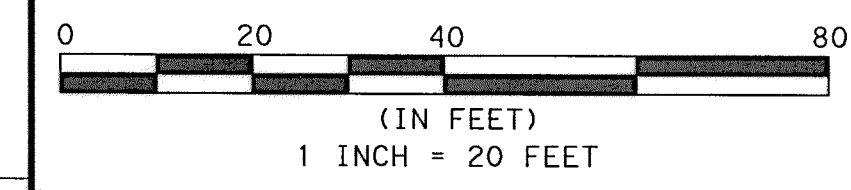
MATCHLINE STA 34+00 SEE SHT 13 OF 18

pwt \\ lcadpw. laddoc. intproj\projectwise\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\Civil\99-001-P&P-WTR-15.dgn 9/11/2014 9:41:31 AM MJCuthrie



SEE PLAN VIEW SHEET 15 OF 18

NOTE:  
1. SEE PAVEMENT & STORM SEWER SHEETS FOR MORE INFORMATION.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

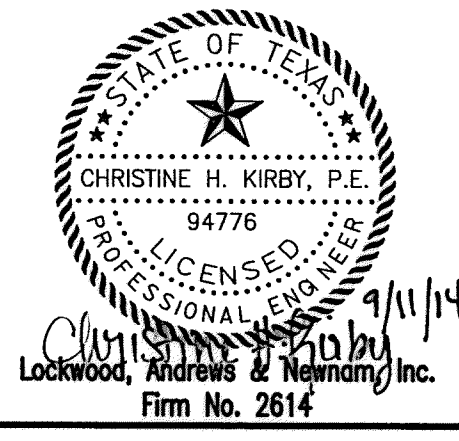
NOTICE:  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINE CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

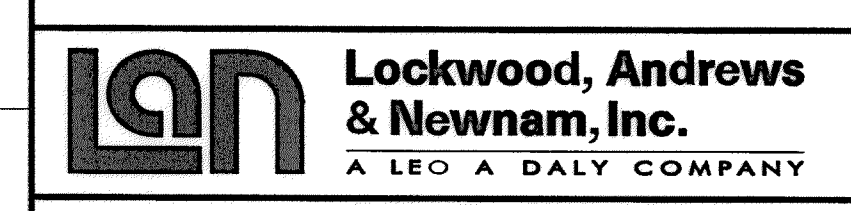
*DeLoach* 9-25-14 DATE  
AT&T UTILITY LINES SHOWN APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*Shannon* 10/2/14 DATE  
CENTERPOINT ENERGY/NATURAL GAS FACILITIES VERIFICATION ONLY (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*Shannon* 10/2/14 DATE  
CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY. (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



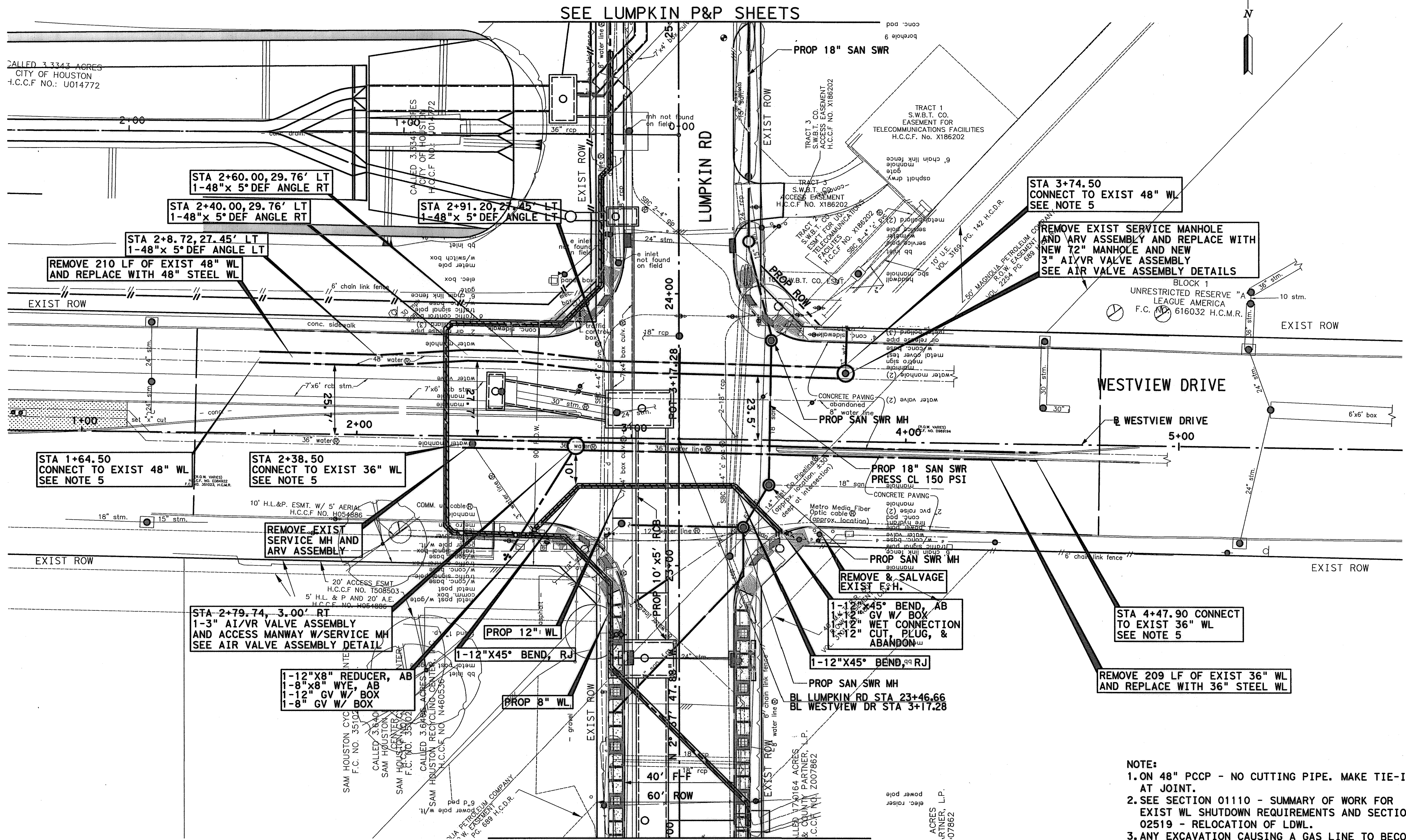
MEMORIAL CITY REDEVELOPMENT AUTHORITY



LUMPKIN ROAD  
N-T17000-0012-3  
PROFILE VIEW  
WATER & SAN SWR IMPROVEMENTS  
STA 34+00 TO END PROJECT  
SHEET 16 OF 18  
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG. NO.	
VERT: 1"=2'		
HORIZ: 1"=20'		
SHEET:	110 OF 226	

No. DATE REVISIONS  
 9/17/2014  
 3:17:53 PM  
 9/17/2014  
 P:\Projects\10384-001\4-0-Production\4-01-Drawings\Civil\100-001-RP-WTR-16.dgn



CALLED 3.3343 ACRES  
CITY OF HOUSTON  
H.C.C.F. NO.: U014772

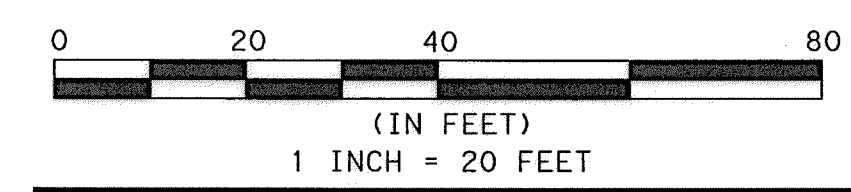
SEE LUMPKIN P&P SHEETS

SEE LUMPKIN P&P SHEETS

SEE PROFILE VIEW SHEET 18 OF 18

**BENCHMARK:**  
CITY OF HOUSTON SURVEY MARKER STAMPED  
4958/7710 LOCATED AT EAST SIDE OF  
LUMPKIN RD., 110 FEET SOUTHWEST OF  
LARSTON DR. INTERSECTION IN KEYMAP 449Z  
ELEV. =82.18 FEET (NAVD 88\GEOID09)

**T.B.M. #48**  
SET "X" LOCATED CENTERLINE OF  
WESTVIEW DRIVE.  
APPROX. 175 FT WEST OF LUMPKIN  
DRIVE AND WESTVIEW DRIVE INTERSECTION.  
D STA. 37+59.36, 0.22' RT.  
ELEV. =85.53'



TO ARRANGE FOR LINES TO BE TURNED OFF  
OR MOVED, CALL CENTERPOINT ENERGY AT  
713-207-2222

**NOTICE:**  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO  
CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT  
UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES  
NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

AT&T UTILITY LINES SHOWN DATE 9-25-14  
APPROVED FOR AT&T/SWGT UNDERGROUND CONDUIT  
FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

CENTERPOINT ENERGY/NATURAL GAS DATE 10/2/14  
FACILITIES VERIFICATION ONLY  
(THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP  
NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR  
CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT  
SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

CENTERPOINT ENERGY/UNDERGROUND DATE 10/2/14  
ELECTRICAL FACILITIES VERIFICATION ONLY.  
(THIS SIGNATURE VERIFIES EXISTING UNDERGROUND  
FACILITIES - NOT TO BE USED FOR CONFLICT  
VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



MEMORIAL CITY  
REDEVELOPMENT AUTHORITY

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

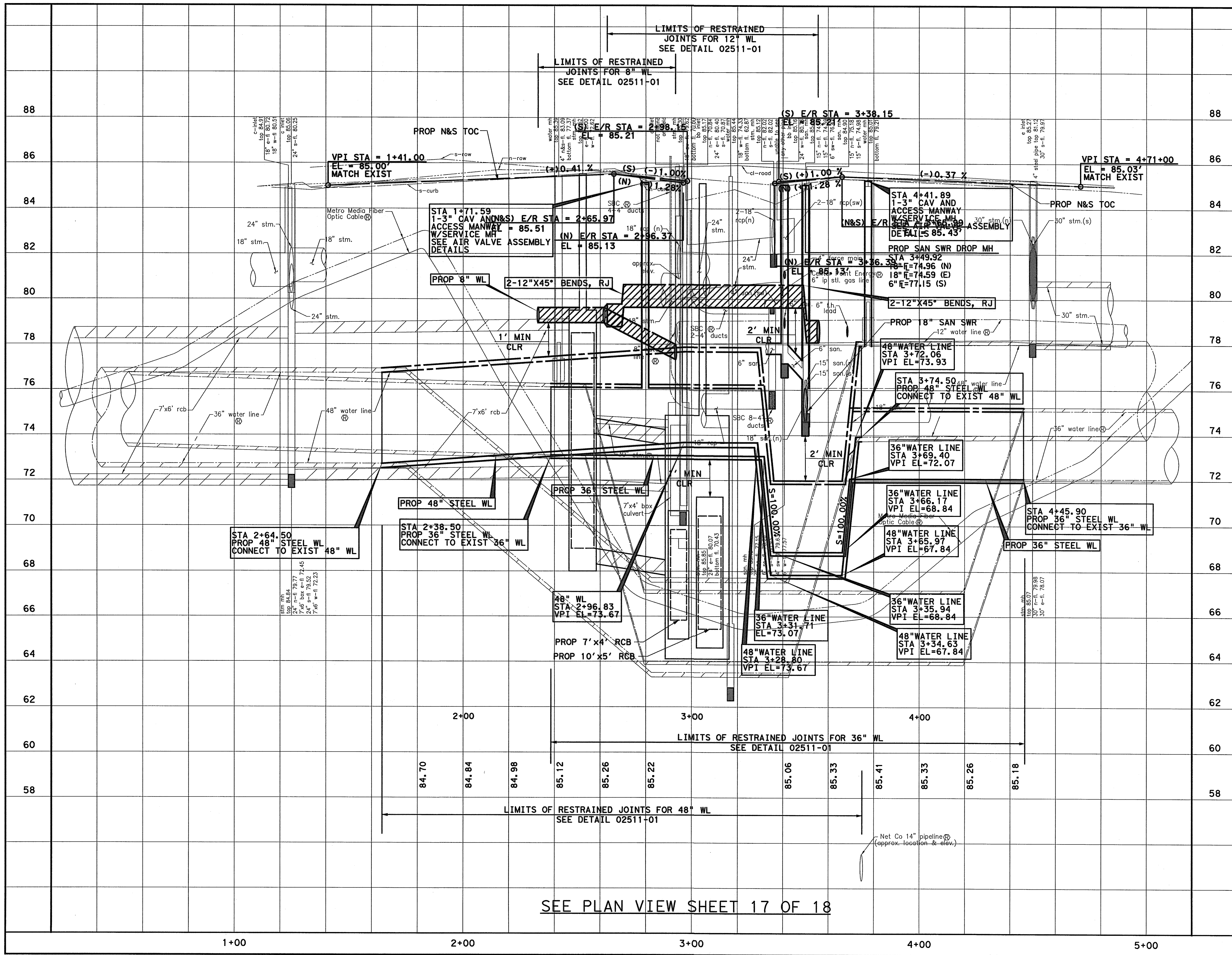
WESTVIEW DRIVE  
N-T17000-0012-3  
PLAN VIEW  
WATER & SAN SWR IMPROVEMENTS  
STA 22+00 TO STA 25+00  
SHEET 17 OF 18

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG NO.
VERT: 1"=2'		
HORZ: 1"=20'		
SHEET:		
111 OF 226		

- NOTE:**
- ON 48" PCCP - NO CUTTING PIPE. MAKE TIE-INS AT JOINT.
  - SEE SECTION 01110 - SUMMARY OF WORK FOR EXIST WL SHUTDOWN REQUIREMENTS AND SECTION 02519 - RELOCATION OF LDWL.
  - ANY EXCAVATION CAUSING A GAS LINE TO BECOME EXPOSED SHOULD NOT BE WIDER THAN 25 FEET, PERPENDICULAR TO TRENCH. SUPPORT LINE USING TIMBERS RESTING ON NATURAL GROUND ABOVE THE LINE WITH NYLON STRAPS. IF CONTRACTOR REQUIRES MORE THAN 25 FEET, INFORM ENGINEER.
  - CONTRACTOR SHALL BRACE AND SUPPORT ATT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLES AND PROPOSED UTILITIES.
  - SEE LARGE DIAMETER STANDARD WATER CONNECTION DETAILS

No. DATE REVISIONS  
 APP.  
 9/11/2014 9:41:51 AM MUGuthrie  
 9/11/2014 9:41:51 AM MUGuthrie  
 9/11/2014 9:41:51 AM MUGuthrie



**NOTE:**  
1. SEE PAVEMENT & STORM SEWER SHEETS XX TO XX FOR MORE INFORMATION.

0 20 40 80  
(IN FEET)  
1 INCH = 20 FEET

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

AT&T UTILITY LINES SHOWN DATE 9-25-14  
APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

CENTERPOINT ENERGY/NATURAL GAS DATE 10/7/14  
FACILITIES VERIFICATION ONLY  
(THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

CENTERPOINT ENERGY/UNDERGROUND ELECTRICAL FACILITIES VERIFICATION ONLY DATE 10/7/14  
(THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP UNDERGROUND ELECTRICAL FACILITIES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.

STATE OF TEXAS  
CHRISTINE H. KIRBY, P.E.  
94776  
PROFESSIONAL ENGINEER  
Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

WESTVIEW DRIVE  
N-T17000-0012-3  
PROFILE VIEW  
WATER & SAN SWR IMPROVEMENTS  
STA 1+00 TO STA 5+00  
SHEET 18 OF 18

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO. 1  
DRAWING SCALE:  
VERT: 1"=2'  
HORZ: 1"=20'  
SHEET: 112 OF 226

SEE PLAN VIEW SHEET 17 OF 18

APP. REVISIONS No. DATE

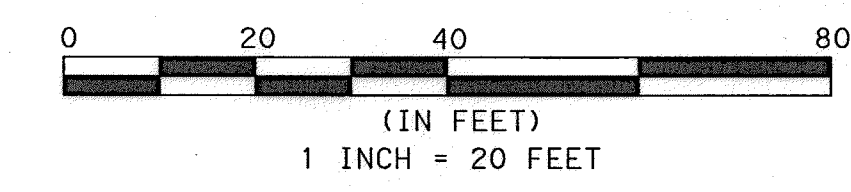
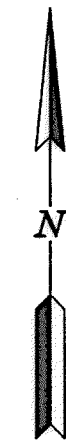
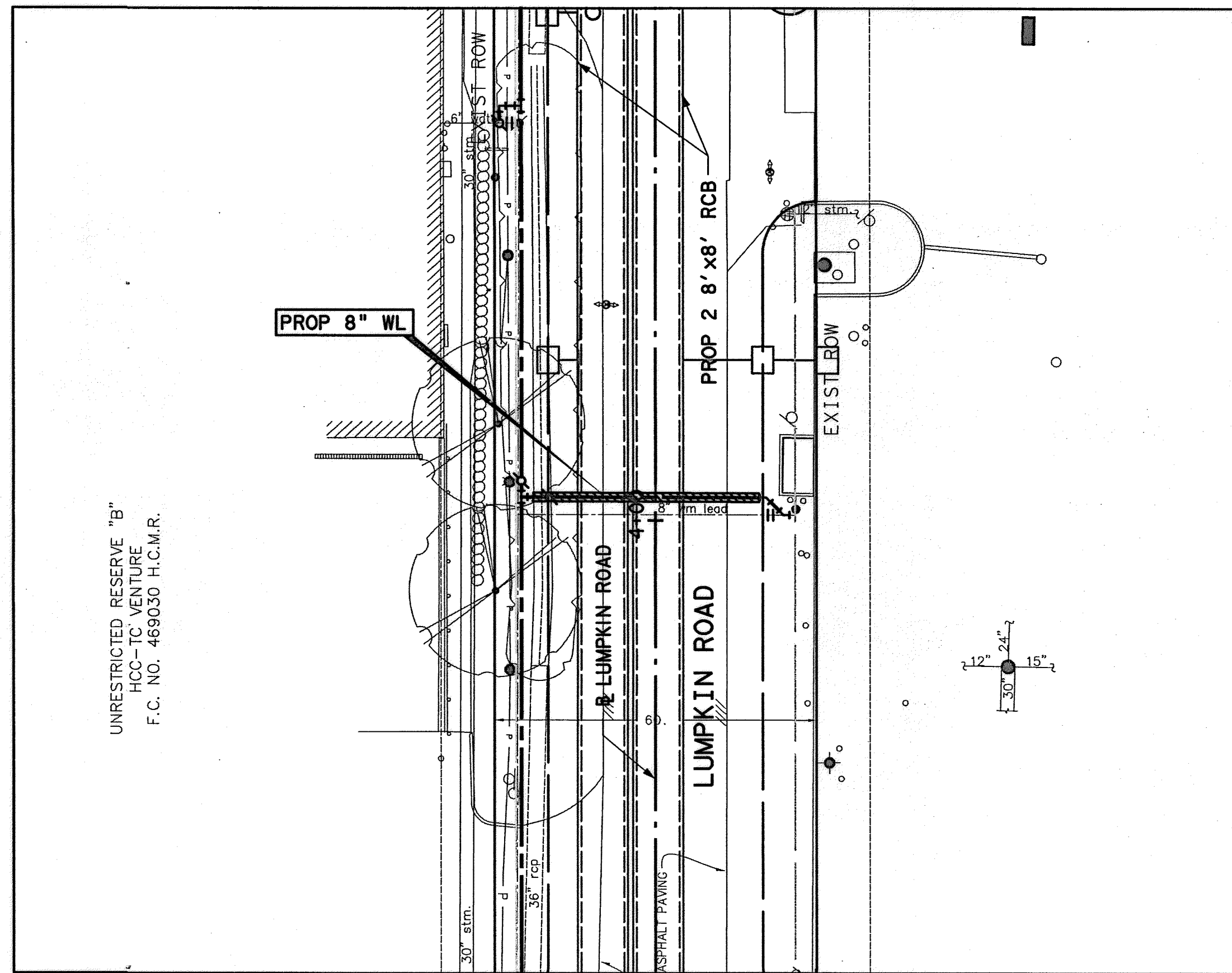
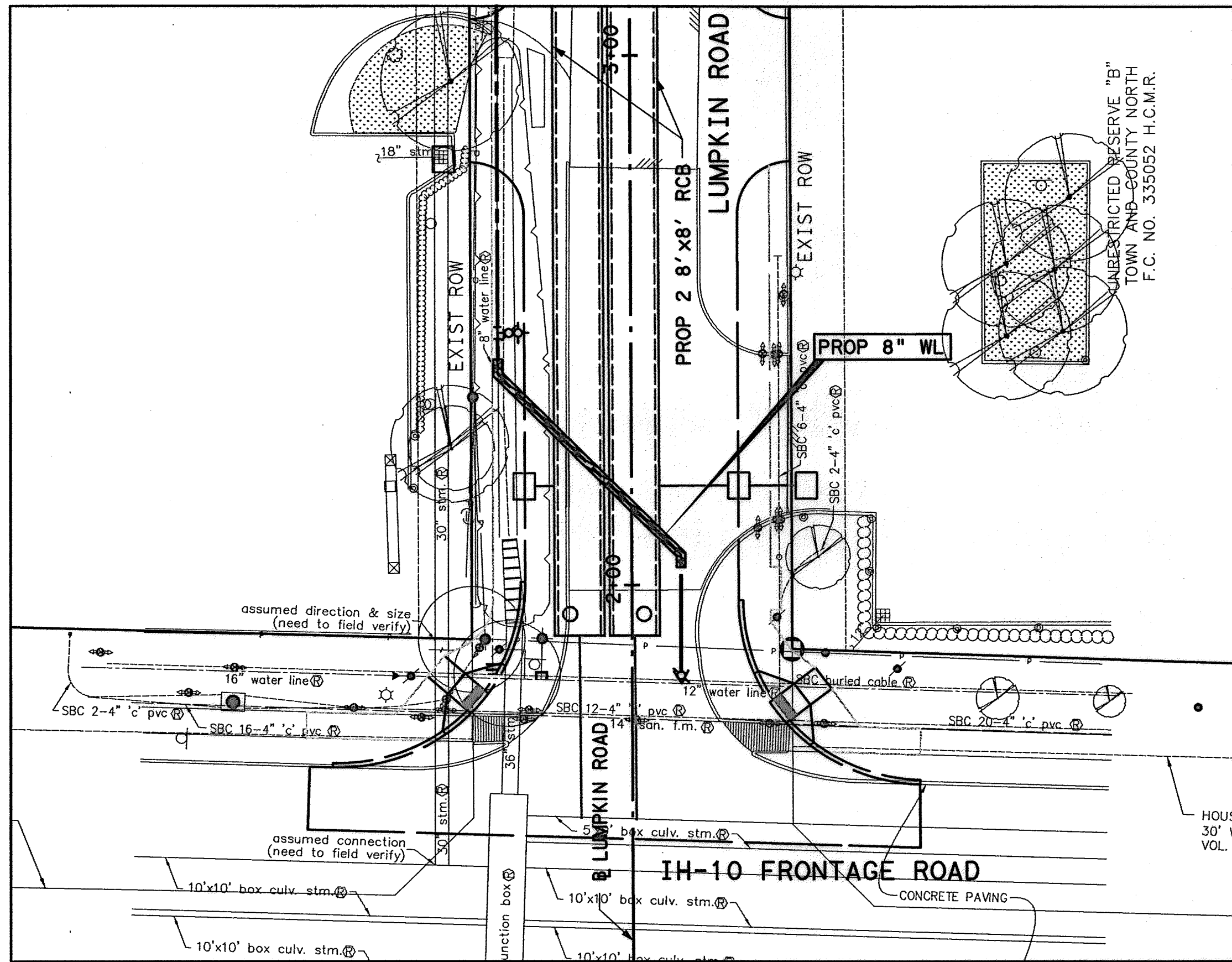
3-18-11 PH

9/17/2014

McGuthrie

pww\l\adpw.ladco.int\proj\westview\Documents\Proj\Drawings\Civil\102-001-P&P-WTR-18.dgn





TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

*Cowan* 9-25-14  
DATE

AT&T UTILITY LINES SHOWN  
APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*Hammer* 10/2/14  
DATE

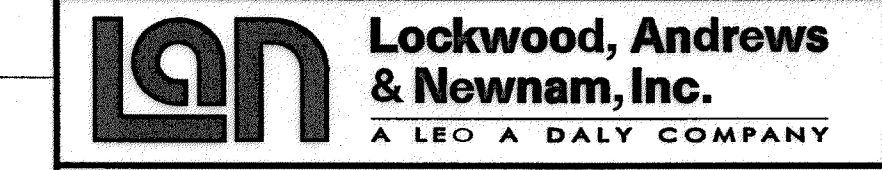
CENTERPOINT ENERGY/NATURAL GAS  
FACILITIES VERIFICATION ONLY  
(THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*Hammer* 10/2/14  
DATE

CENTERPOINT ENERGY/UNDERGROUND  
ELECTRICAL FACILITIES VERIFICATION ONLY.  
(THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



MEMORIAL CITY  
REDEVELOPMENT AUTHORITY



LUMPKIN ROAD  
N-T17000-0012-3  
WATER & SANITARY SEWER  
CROSSING  
SHEET 1 OF 3

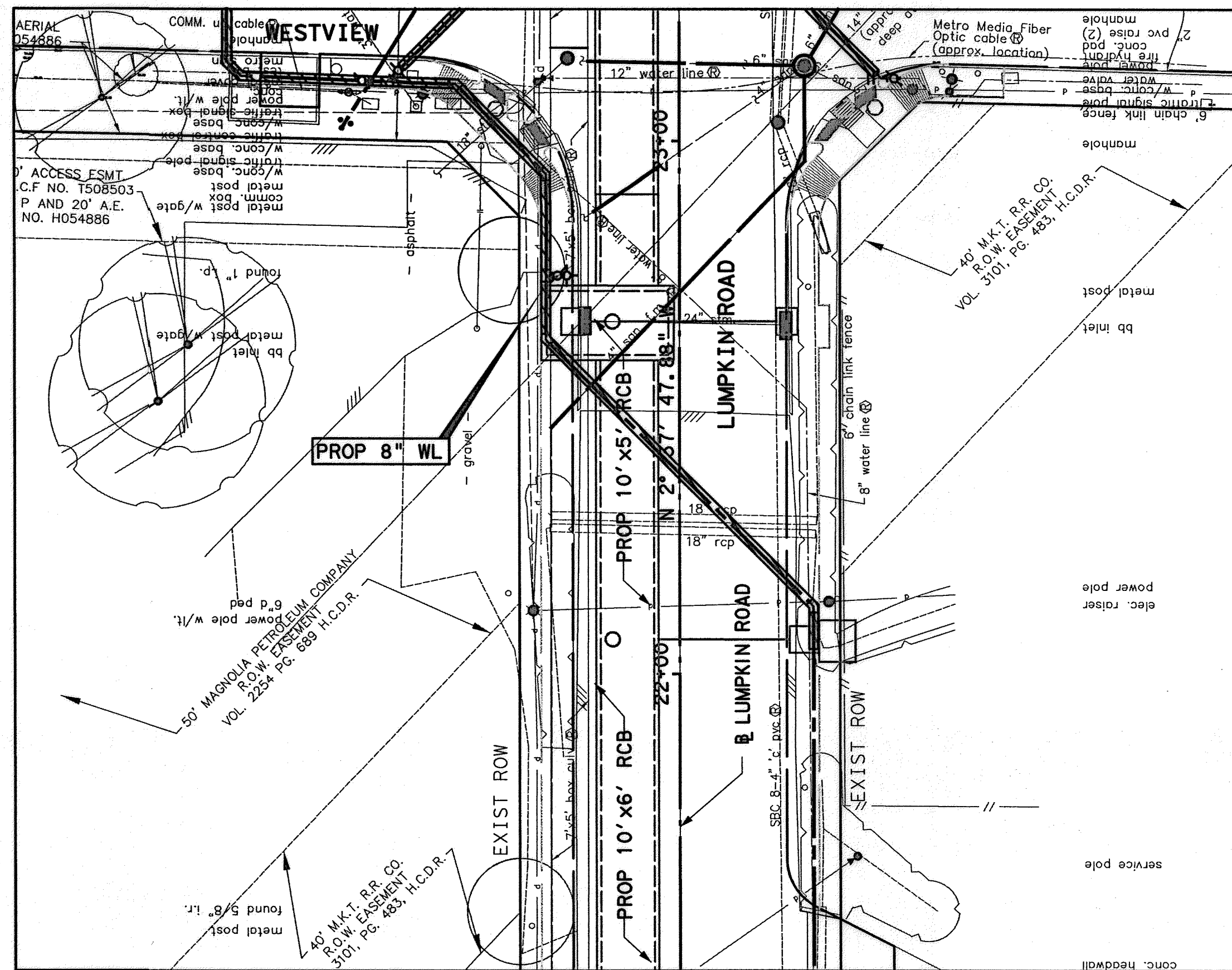
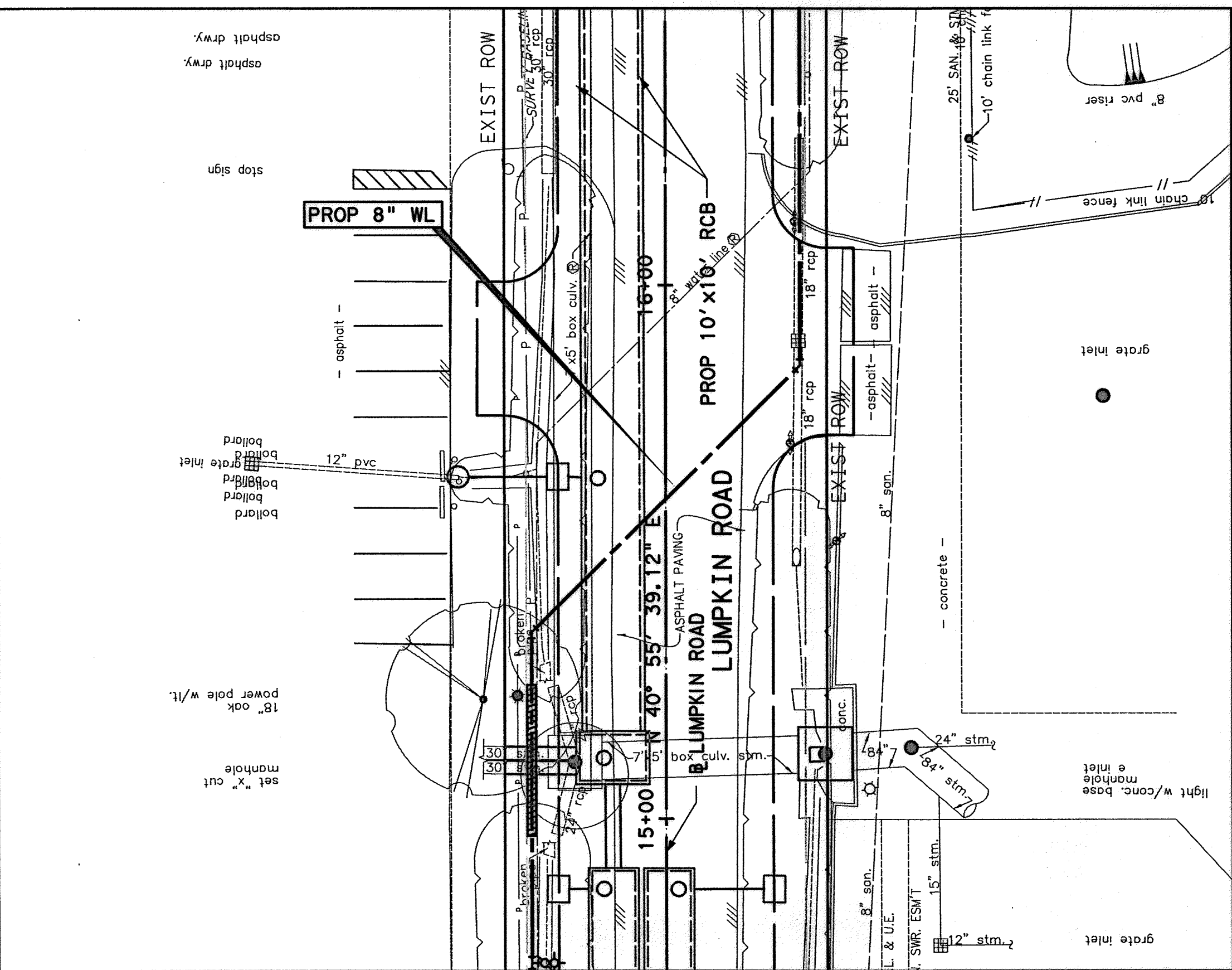
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

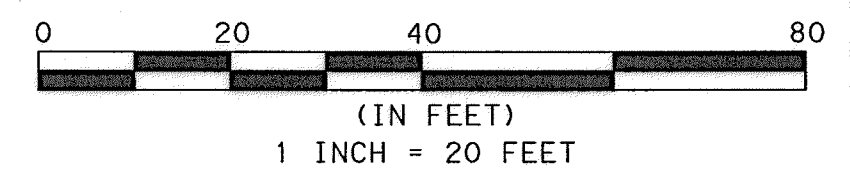
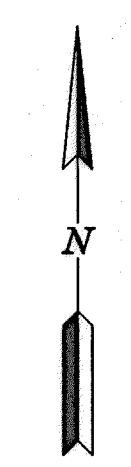
FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: 1"=4'	
HORZ: 1"=40'	
SHEET:	
113 OF 226	

79		79	79
75		75	75
71		71	71
67		67	67

APP. REVISIONS No. DATE  
 4/14/21 PM 9/3/2014  
 48  
 130-10384-001\4-9-Product\om\4-01-Drawings\Civil\103-001-WFE-SAN CROSSING-01.dgn  
 pw \ \ adpw. laddoc. lnt prjctkwise\Documents\Project\130-10384-001\4-9-Product\om\4-01-Drawings\Civil\103-001-WFE-SAN CROSSING-01.dgn

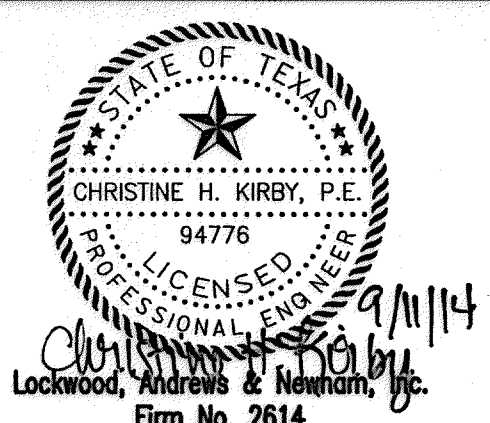


**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV.=82.18 FEET (NAVD 88\GEOID09)

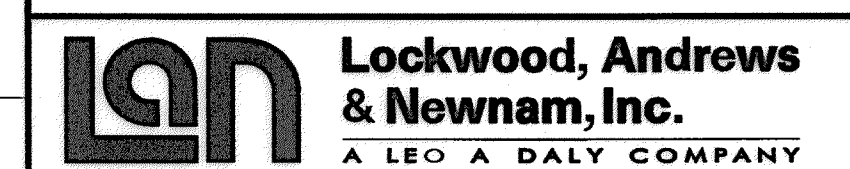


TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222  
**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

**PRIVATE UTILITY LINES SHOWN**  
 AT&T UTILITY LINES SHOWN DATE 9/25/14  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR  
 CENTERPOINT ENERGY/NATURAL GAS DATE 10/2/14  
 FACILITIES VERIFICATION ONLY. THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION. (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.  
 CENTERPOINT ENERGY/UNDERGROUND DATE 10/7/14  
 ELECTRICAL FACILITIES VERIFICATION ONLY. THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION. SIGNATURE VALID FOR SIX MONTHS.



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**



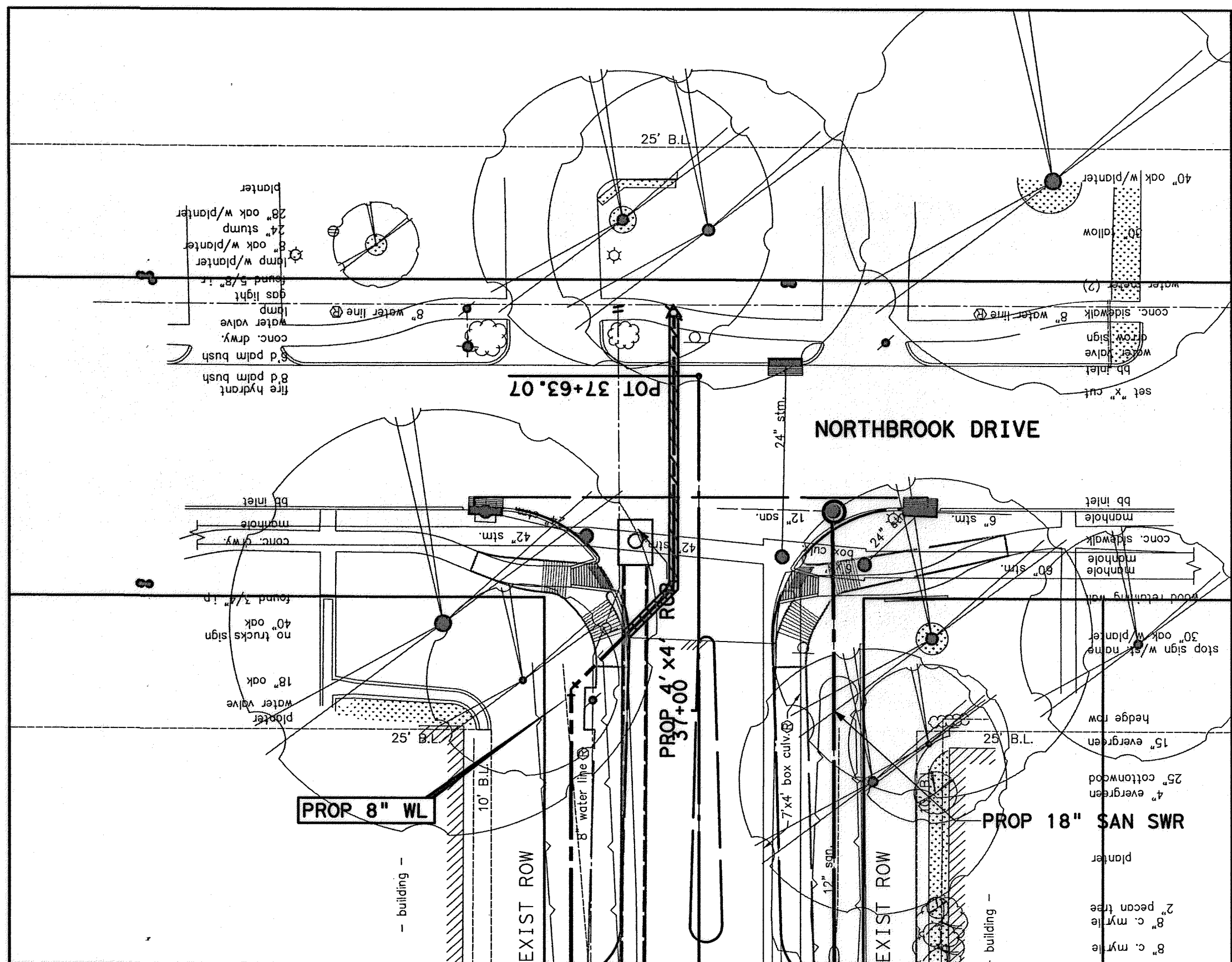
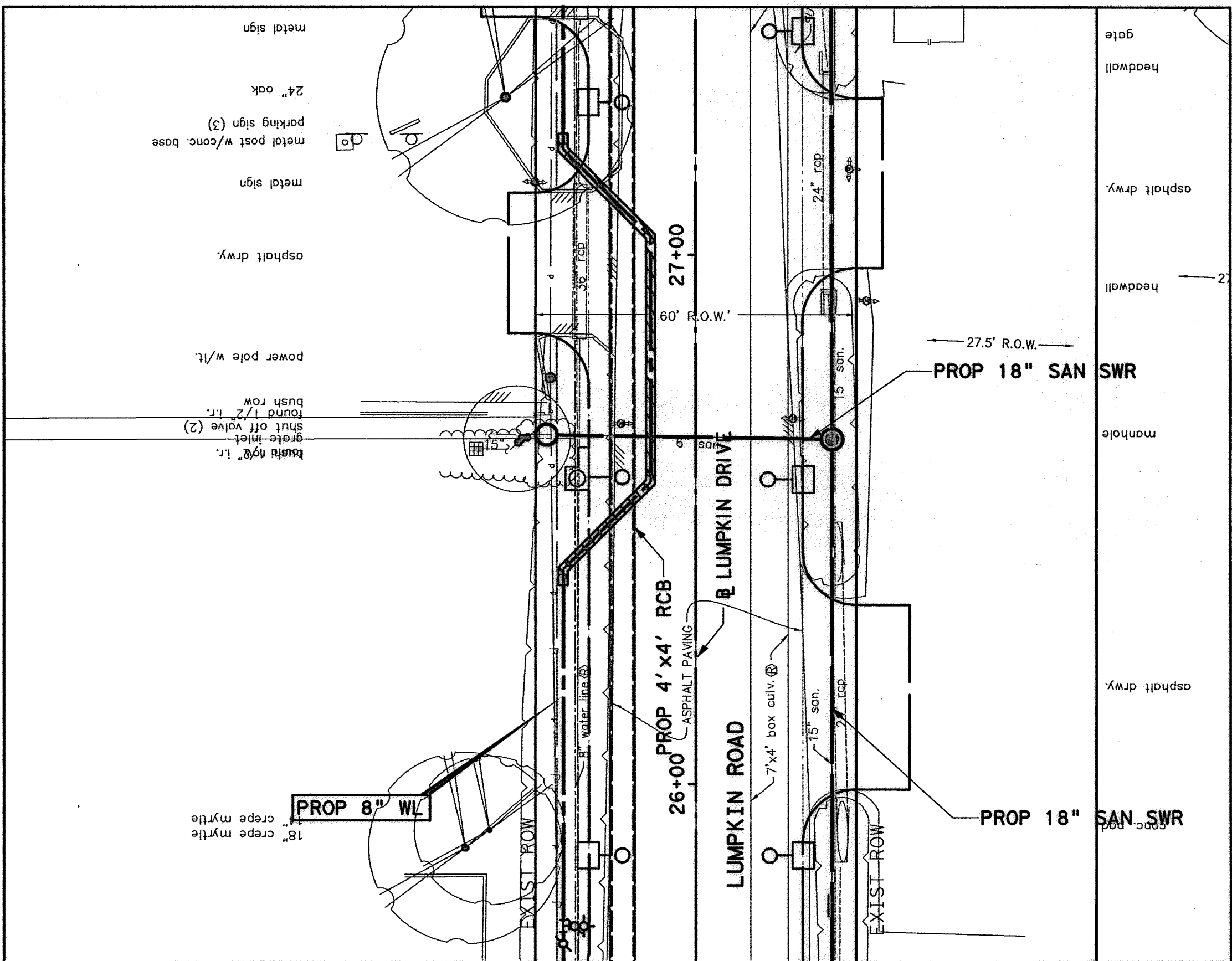
**LUMPKIN ROAD N-T17000-0012-3 WATER & SANITARY SEWER CROSSING SHEET 2 OF 3**

**CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING**

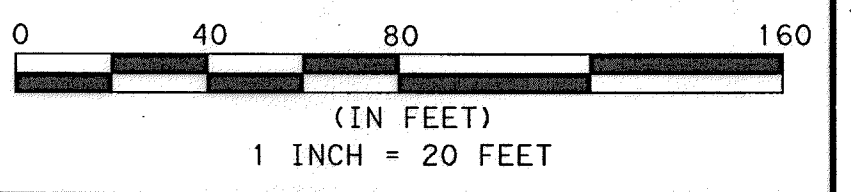
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY Dwg. NO.	
VERT: 1"=2'		
HORZ: 1"=20'		
SHEET:	114 OF 226	

83				83	88					
80		EXIST R.O.W.	EXISTING GROUND	80	84			EXISTING GROUND		
76		4' MIN COVER	PROP 8" WL	76	80			4' MIN COVER	LIMITS OF DIP RESTRAINED JOINTS SEE DETAIL 02511-01	
72		1' MIN		72	76			1' MIN	PROP 8" WL	
68			PROP 10' X 6' RCB	68	72				EXIST 7' X 5' RCB	PROP 10' X 5' RCB

APP. \_\_\_\_\_  
 REVISIONS \_\_\_\_\_  
 No. DATE \_\_\_\_\_  
 MuGuthrie  
 4/14/14 4:49 PM  
 9/3/2014  
 92-2-14  
 10/2/14  
 10/7/14  
 STATE OF TEXAS  
 CHRISTINE H. KIRBY, P.E.  
 94776  
 LICENSED PROFESSIONAL ENGINEER  
 Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614  
 MEMORIAL CITY REDEVELOPMENT AUTHORITY  
 Lockwood, Andrews & Newnam, Inc.  
 A LEO A DALY COMPANY  
 LUMPKIN ROAD N-T17000-0012-3 WATER & SANITARY SEWER CROSSING SHEET 2 OF 3  
 CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 WATER WASTEWATER TRAFFIC  
 ST. & BRIDGE STORMWATER SWG  
 FILE NO. FACILITY  
 DRAWING SCALE: CITY Dwg. NO.  
 VERT: 1"=2'  
 HORZ: 1"=20'  
 SHEET: 114 OF 226



**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV. = 82.18 FEET (NAVD 88\GEOID09)



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

*J. Cowart* 9-25-14  
 AT&T UTILITY LINES SHOWN DATE  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

*Shannon* 10/7/14  
 CENTERPOINT ENERGY/NATURAL GAS DATE  
 FACILITIES VERIFICATION ONLY  
 (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

*Shannon* 10/7/14  
 CENTERPOINT ENERGY/UNDERGROUND DATE  
 ELECTRICAL FACILITIES VERIFICATION ONLY.  
 (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



MEMORIAL CITY  
 REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newman, Inc.  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 WATER & SANITARY SEWER  
 CROSSING  
 SHEET 3 OF 3

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2'		
HORZ: 1"=20'		
SHEET:	115 OF 226	

86			EXISTING GROUND	86	88			EXISTING GROUND	88
84				84	86				86
82				82	84				84
80	EXIST 6" SAN SWR			80	82				82
78		PROP 8" WL		78	80				80
76			PROP 18" SAN SWR	76	78				78
74		PROP 51' 8" SAN SWR		74	76			PROP 18" SAN SWR	76
72				72	74				74
70			PROP 4'x4' RCB	70	72			PROP 4'x4' RCB	72
68				68	70				70

APP. REVISIONS No. DATE No. DATE  
 MUguthrie 4:15:15 PM 9/3/2014  
 WTR-SAN CROSSING-03.dgn 9/3/2014  
 Lockwood, Andrews & Newman, Inc. Firm No. 2614

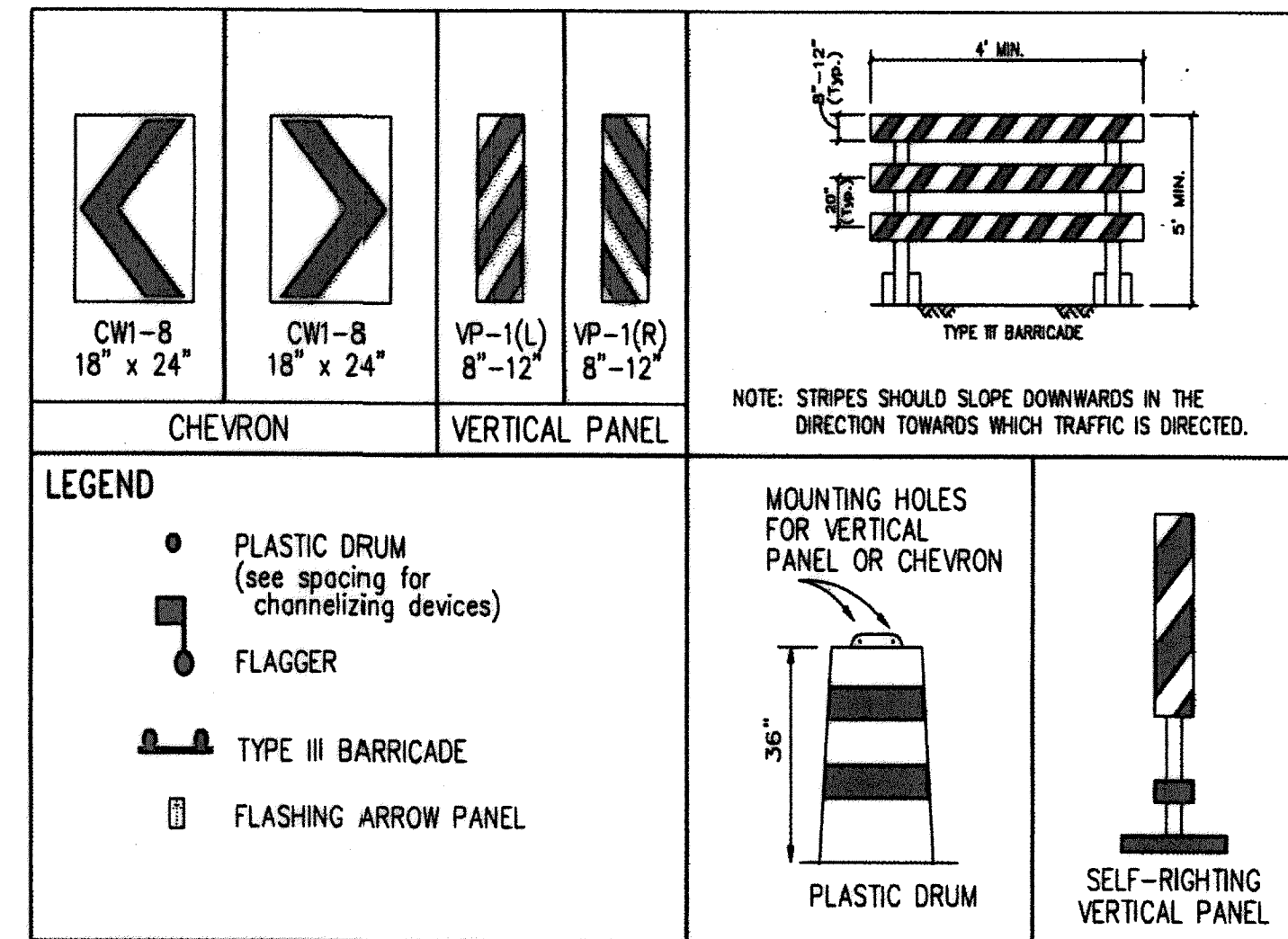
## GENERAL NOTES

1. The Contractor shall provide and install traffic control devices in conformance with Part VI of Texas Manual on Uniform Traffic Control Devices (TMUTCD) latest edition with revisions during the entire construction period.
2. All signs and traffic control devices shall conform to the latest version of the TMUTCD.
3. No lanes shall be closed during the hours of 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM Monday thru Friday without approval of the City Traffic Engineer.
4. No work shall be performed in residential areas from 7:00 PM to 7:00 AM.
5. Contractor shall maintain approved number of thru lanes of traffic in each direction during construction working hours. Traffic control plans shall include one-way and/or detour plans.
6. Contractor shall maintain traffic lanes and detours according to traffic control plans during working hours.
7. Contractor shall cover open pavement excavations for minor utility work with anchored steel plates during non-working hours, and open lanes for normal traffic flow when feasible.
8. If the Contractor chooses to use a different method of "Traffic Control Plans" during the construction than what is outlined in the contract drawings, the Contractor shall be responsible to prepare and submit an alternate set of traffic control plans to the City of Houston Project Manager for approval ten working days prior to implementation. These plans shall be drawn to scale on reproducible mylars and shall be sealed by a Licensed Engineer in the State of Texas. Traffic Operations Division representative approval is required to accept the proposed changes.
9. Contractor shall secure lane/sidewalk closure permits from Traffic Operations Division (Mobility Permit Section at <http://www.gims.houstontx.gov/portalWS/MainPortal.aspx>) before implementing the traffic control plan. The application must be submitted at least ten business days prior to the implementation of the traffic control plan and/or beginning construction work. The contractor shall provide traffic control plans, construction sequencing, and schedule with the application.
10. Contractor shall have approved traffic control plan and permit at the job site for inspection at all times.
11. During pavement surface restoration projects; the Contractor shall not open closed lanes until the pavement surface has cured enough to allow vehicular traffic according to City of Houston Standard Specifications.
12. The Contractor is responsible for scheduling and coordinating all construction activities with stake holders in the vicinity including emergency response agencies such as Houston Police Department, Houston Fire Department, and Metropolitan Transit Authority.
13. Contractor shall be responsible for issuing all work directives to all sub-contractors, utility companies, and all other entities performing construction work associated with the project.
14. Nothing in these notes or plans shall relieve the Contractor of the responsibility for job site conditions during the course of construction of the project; including safety of all modes of transportation, persons, and property, and that this requirement shall apply continuously and not be limited to working hours.
15. The Traffic Operation Division (Mobility Permits Group) per the direction of the City Traffic Engineer have the right to demand the installation of additional traffic control devices or modifications to these plans and notes, as deemed necessary to promote the safe and orderly flow of traffic and pedestrians through the construction work zone. The Contractor shall comply with these additional requests or modifications with due diligence.
16. All existing traffic control signs and pavement markings shall be maintained in visible locations during construction unless prior written approval is obtained from City of Houston Project Manager. The Contractor shall restore or replace (at the discretion of the City Traffic Engineer) any pavement marking or signing damaged during construction operations, including Raised Pavement Markers (RPMs) and chip seal markers.
17. When entering or leaving roadways carrying public traffic, the Contractor's equipment, whether empty or loaded shall in all cases yield to public traffic with assistance by Contractor provided certified flagger/peace officer.
18. Access to driveways adjacent to the construction work zone shall be maintained at all times as much as possible. Additional cones delineators may be required to delineate the driveway access route through the construction work zone. A minimum of one travel lane shall be maintained across the driveways, unless prior written approval is obtained from City of Houston Project Manager.
19. Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately by the Contractor.
20. The Contractor shall submit an application for temporary parking restrictions if there are parking meters located at the proposed lane closures from Parking Management Division (832-393-6690) at least ten business days before implementation of lane closures. In addition, temporary no parking signs shall be posted 24 hours prior to commencement of work.
21. Additional off duty police officers/flaggers may be requested to direct traffic when lanes are blocked at the discretion of the City Project Manager even if they are not specifically identified on the project plans.
22. The Contractor shall replace within 72 hours, all traffic signal loop detectors damaged during construction.
23. In general, a solar powered flashing arrow board shall be required on all major thoroughfare lane closures. Exceptions to flashing arrow boards and/or implementation on residential lane closures shall be approved by the City Traffic Engineer.
24. Approved traffic control plan shall be in place before starting any excavation.

## SPACING FOR CHANNELIZING DEVICES

- A. Plastic drums on merging taper @ 30' c - c with chevron sign @ 60' c - c and warning lights for overnight closure.
- B. Plastic drums on downstream taper @ 30' c - c (return taper and barricade are optional and divided roadway section)
- C. Plastic drums on radii @ 35' c - c.
- D. Plastic drums on tangent @ 35' c - c with vertical panel at 70' c - c and approved warning light @ 70' c - c (for overnight closure).
- E. Plastic drums in front of construction zone @ 20' c - c with vertical panel at 40' c - c and approved warning light @ 40' c - c (for overnight closure).
- F. Concrete Traffic Barrier (CTB) or Low Profile Concrete Traffic Barrier (LPCTB) with approved reflectors @ 10' c - c if pavement drop is greater than 1 foot.
- G. Plastic drums w/Guard rail mounted.
- H. Self-Righting vertical panel spacing.
  - 4 lanes to 2 lanes undivided roadway section @ 20' c - c.
  - 4 lanes divided roadway to one side two way roadway @ 20' c - c.
  - Left lane and right lane storage bays @ 15' c - c.
- I. Spacing shown on traffic control shall supersede the above spacing.
- J. Spacing may be adjusted to provide driveways, intersections and /or median openings.

## CHANNELIZATION AND BARRICADES



TYPICAL SIGN SPACING, TAPER LENGTHS, AND SUGGESTED SPACING OF CHANNELIZATION DEVICES						
Posted Speed (mph)	Sign Spacing "X"	Min. Desirable Taper Length "L"			Suggested Maximum Spacing Of Device	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	120'	150'	165'	180'	30'	60' - 75'
35	160'	205'	225'	245'	35'	70' - 90'
40	240'	265'	295'	320'	40'	80' - 100'
45	320'	450'	495'	540'	45'	90' - 110'
50	400'	500'	550'	600'	50'	100' - 125'
55	500'	550'	605'	660'	55'	110' - 140'

Length for Buffers	
Posted Speed (mph)	Length in Feet (B)
20	40
25	60
30	90
35	120
40	155
45	195
50	240
55	295
60	350
65	410
70	475

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

TCP NOTES  
CHANNELIZING DEVICES  
AND BARRICADES

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER

APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JUL-01-2012      DWG NO: 01512-01

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEQ A DALY COMPANY



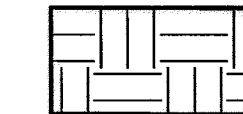
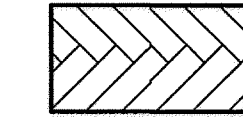
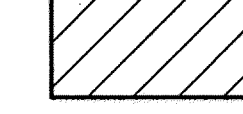


LUMPKIN ROAD  
N-T17000-0012-3  
**TRAFFIC CONTROL PLAN  
GENERAL NOTES**

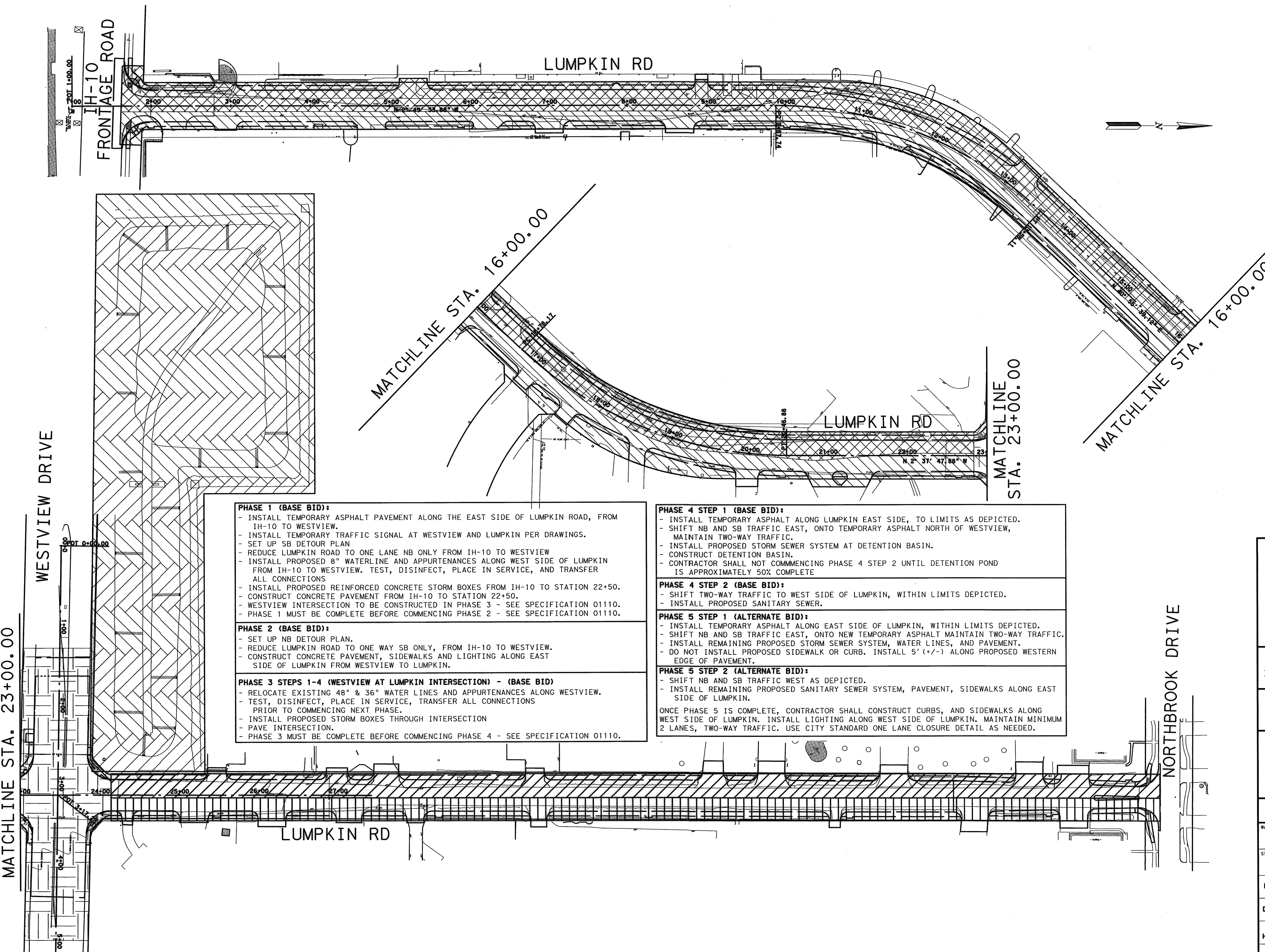
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO. 1	FACILITY
DRAWING SCALE:	CITY DWG NO.
NOT TO SCALE	
SHEET:	
116 OF 226	

9/17/2014 11:15:58 AM M:\authr-1e P:\proj\130-10284-001\Drawings\TCP\105-001-1-CP01 Notes

**LEGEND**

-  PHASE 1
-  PHASE 2
-  PHASE 3
-  PHASE 4 STEP 1
-  PHASE 4 STEP 2
-  PHASE 5 STEP 1
-  PHASE 5 STEP 2



**PHASE 1 (BASE BID):**

- INSTALL TEMPORARY ASPHALT PAVEMENT ALONG THE EAST SIDE OF LUMPKIN ROAD, FROM IH-10 TO WESTVIEW.
- INSTALL TEMPORARY TRAFFIC SIGNAL AT WESTVIEW AND LUMPKIN PER DRAWINGS.
- SET UP SB DETOUR PLAN
- REDUCE LUMPKIN ROAD TO ONE LANE NB ONLY FROM IH-10 TO WESTVIEW
- INSTALL PROPOSED 8" WATERLINE AND APPURTENANCES ALONG WEST SIDE OF LUMPKIN FROM IH-10 TO WESTVIEW. TEST, DISINFECT, PLACE IN SERVICE, AND TRANSFER ALL CONNECTIONS
- INSTALL PROPOSED REINFORCED CONCRETE STORM BOXES FROM IH-10 TO STATION 22+50.
- CONSTRUCT CONCRETE PAVEMENT FROM IH-10 TO STATION 22+50.
- WESTVIEW INTERSECTION TO BE CONSTRUCTED IN PHASE 3 - SEE SPECIFICATION 01110.
- PHASE 1 MUST BE COMPLETE BEFORE COMMENCING PHASE 2 - SEE SPECIFICATION 01110.

**PHASE 2 (BASE BID):**

- SET UP NB DETOUR PLAN.
- REDUCE LUMPKIN ROAD TO ONE WAY SB ONLY, FROM IH-10 TO WESTVIEW.
- CONSTRUCT CONCRETE PAVEMENT, SIDEWALKS AND LIGHTING ALONG EAST SIDE OF LUMPKIN FROM WESTVIEW TO LUMPKIN.

**PHASE 3 STEPS 1-4 (WESTVIEW AT LUMPKIN INTERSECTION) - (BASE BID)**

- RELOCATE EXISTING 48" & 36" WATER LINES AND APPURTENANCES ALONG WESTVIEW.
- TEST, DISINFECT, PLACE IN SERVICE, TRANSFER ALL CONNECTIONS PRIOR TO COMMENCING NEXT PHASE.
- INSTALL PROPOSED STORM BOXES THROUGH INTERSECTION
- PAVE INTERSECTION.
- PHASE 3 MUST BE COMPLETE BEFORE COMMENCING PHASE 4 - SEE SPECIFICATION 01110.

**PHASE 4 STEP 1 (BASE BID):**

- INSTALL TEMPORARY ASPHALT ALONG LUMPKIN EAST SIDE, TO LIMITS AS DEPICTED.
- SHIFT NB AND SB TRAFFIC EAST, ONTO TEMPORARY ASPHALT NORTH OF WESTVIEW, MAINTAIN TWO-WAY TRAFFIC.
- INSTALL PROPOSED STORM SEWER SYSTEM AT DETENTION BASIN.
- CONSTRUCT DETENTION BASIN.
- CONTRACTOR SHALL NOT COMMENCING PHASE 4 STEP 2 UNTIL DETENTION POND IS APPROXIMATELY 50% COMPLETE

**PHASE 4 STEP 2 (BASE BID):**

- SHIFT TWO-WAY TRAFFIC TO WEST SIDE OF LUMPKIN, WITHIN LIMITS DEPICTED.
- INSTALL PROPOSED SANITARY SEWER.

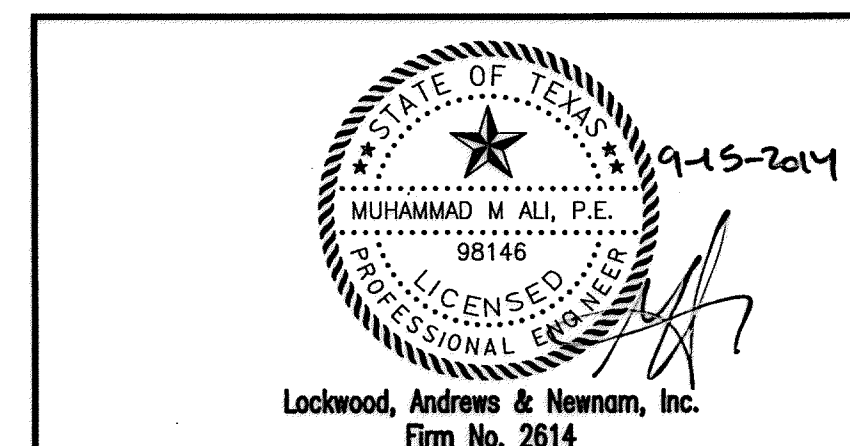
**PHASE 5 STEP 1 (ALTERNATE BID):**

- INSTALL TEMPORARY ASPHALT ALONG EAST SIDE OF LUMPKIN, WITHIN LIMITS DEPICTED.
- SHIFT NB AND SB TRAFFIC EAST, ONTO NEW TEMPORARY ASPHALT MAINTAIN TWO-WAY TRAFFIC.
- INSTALL REMAINING PROPOSED STORM SEWER SYSTEM, WATER LINES, AND PAVEMENT.
- DO NOT INSTALL PROPOSED SIDEWALK OR CURB. INSTALL 5' (+/-) ALONG PROPOSED WESTERN EDGE OF PAVEMENT.

**PHASE 5 STEP 2 (ALTERNATE BID):**

- SHIFT NB AND SB TRAFFIC WEST AS DEPICTED.
- INSTALL REMAINING PROPOSED SANITARY SEWER SYSTEM, PAVEMENT, SIDEWALKS ALONG EAST SIDE OF LUMPKIN.

ONCE PHASE 5 IS COMPLETE, CONTRACTOR SHALL CONSTRUCT CURBS, AND SIDEWALKS ALONG WEST SIDE OF LUMPKIN. INSTALL LIGHTING ALONG WEST SIDE OF LUMPKIN. MAINTAIN MINIMUM 2 LANES, TWO-WAY TRAFFIC. USE CITY STANDARD ONE LANE CLOSURE DETAIL AS NEEDED.



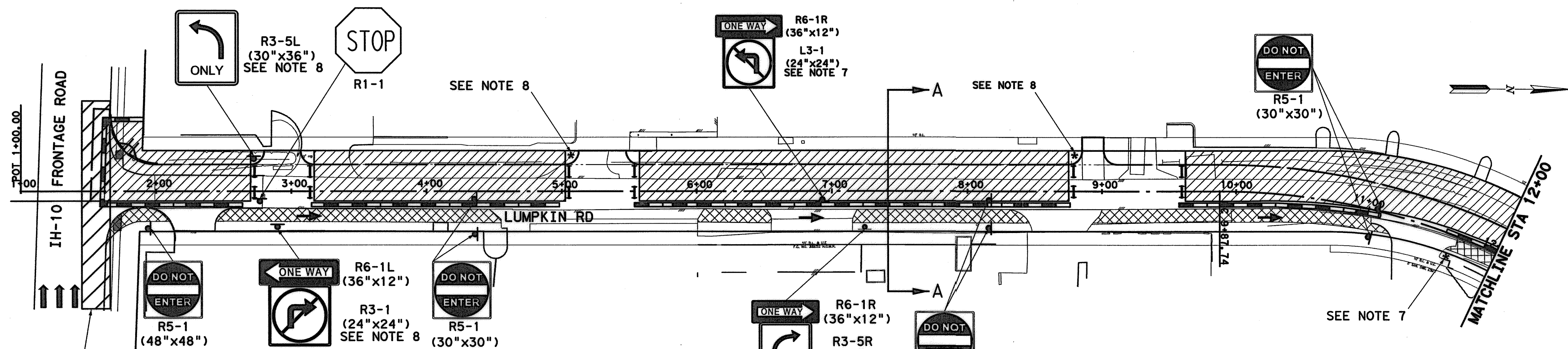
**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

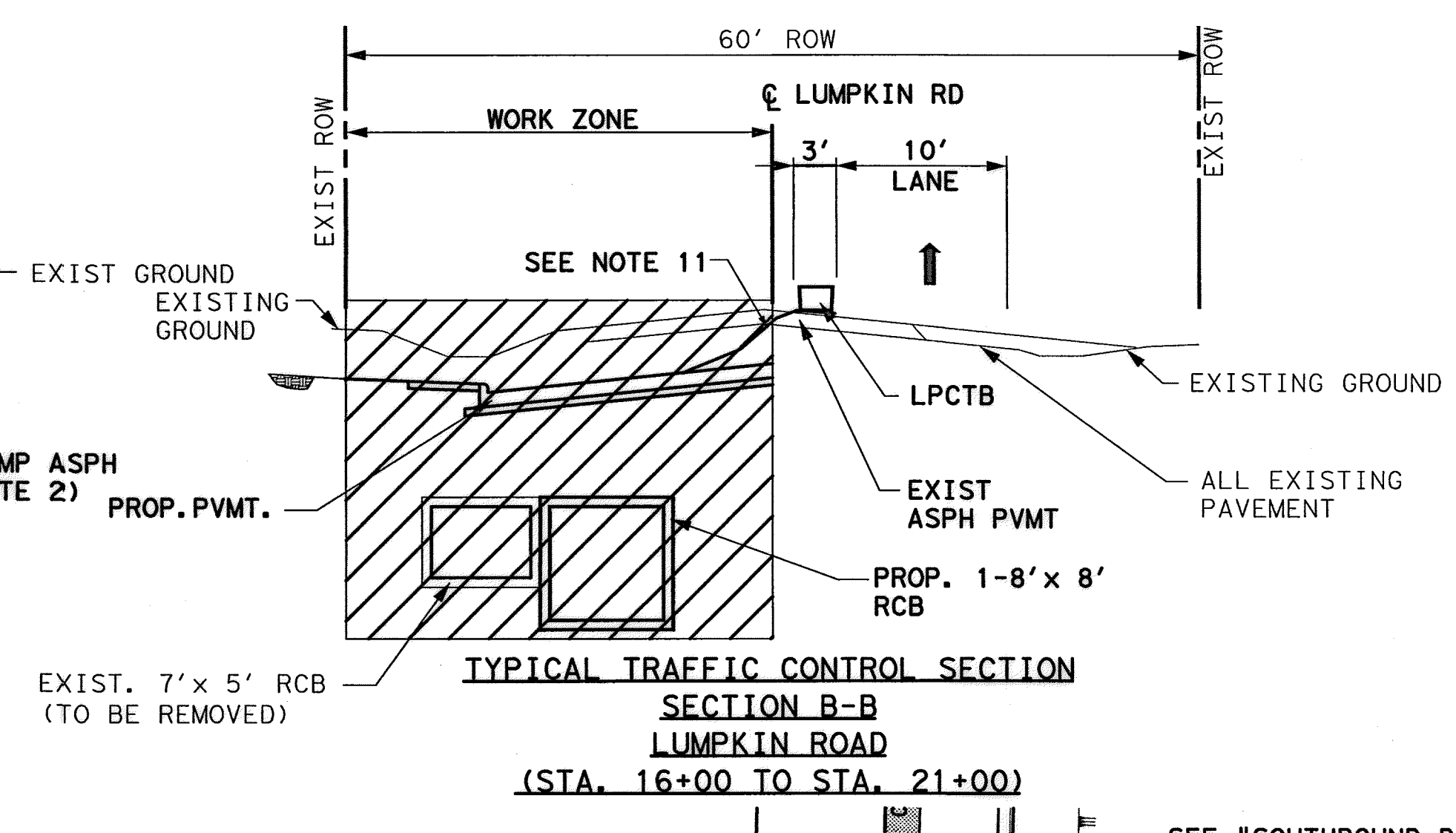
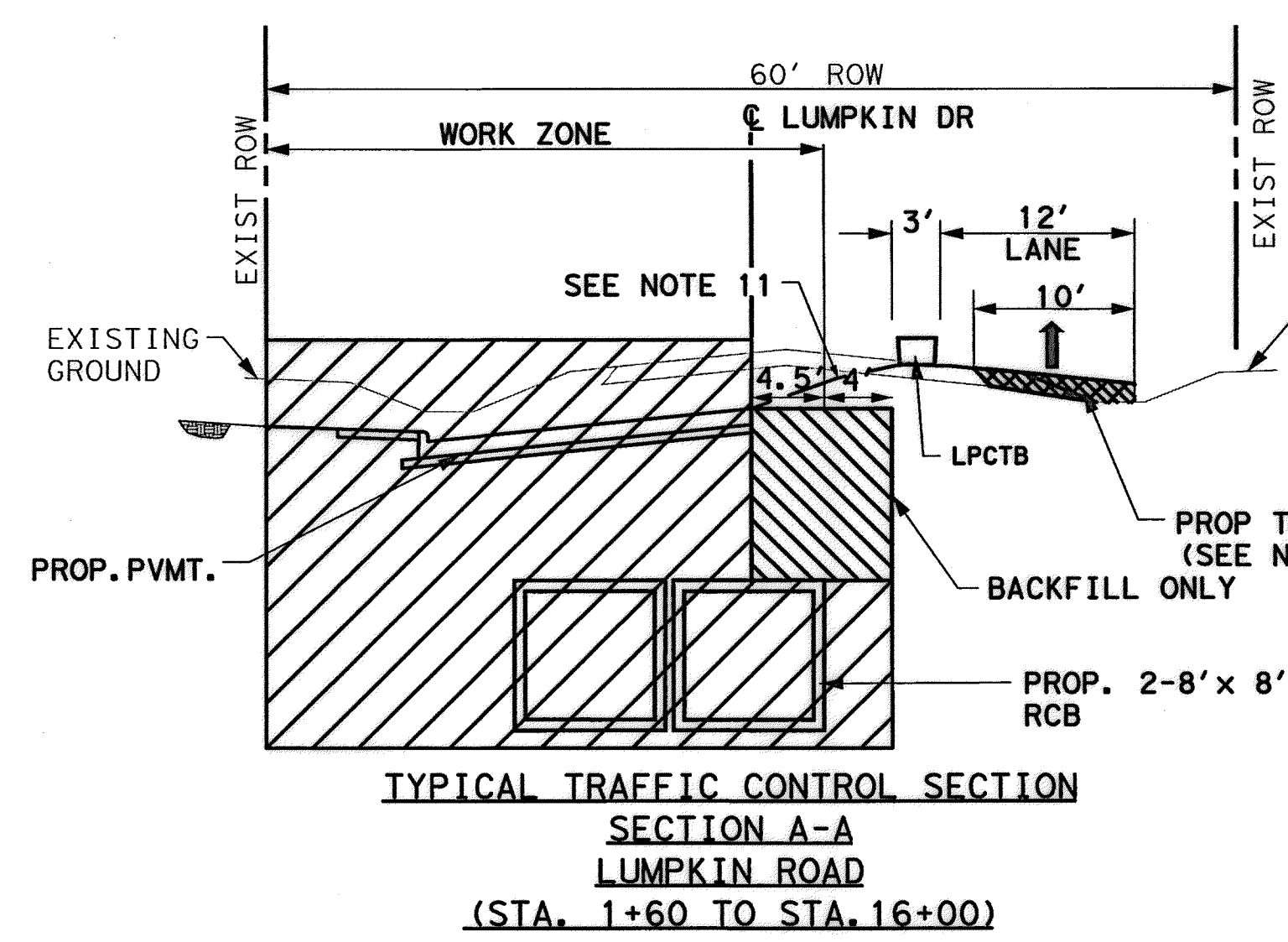
**LUMPKIN ROAD**  
N-T17000-0012-3  
**TRAFFIC CONTROL PLAN**  
OVERALL LAYOUT

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

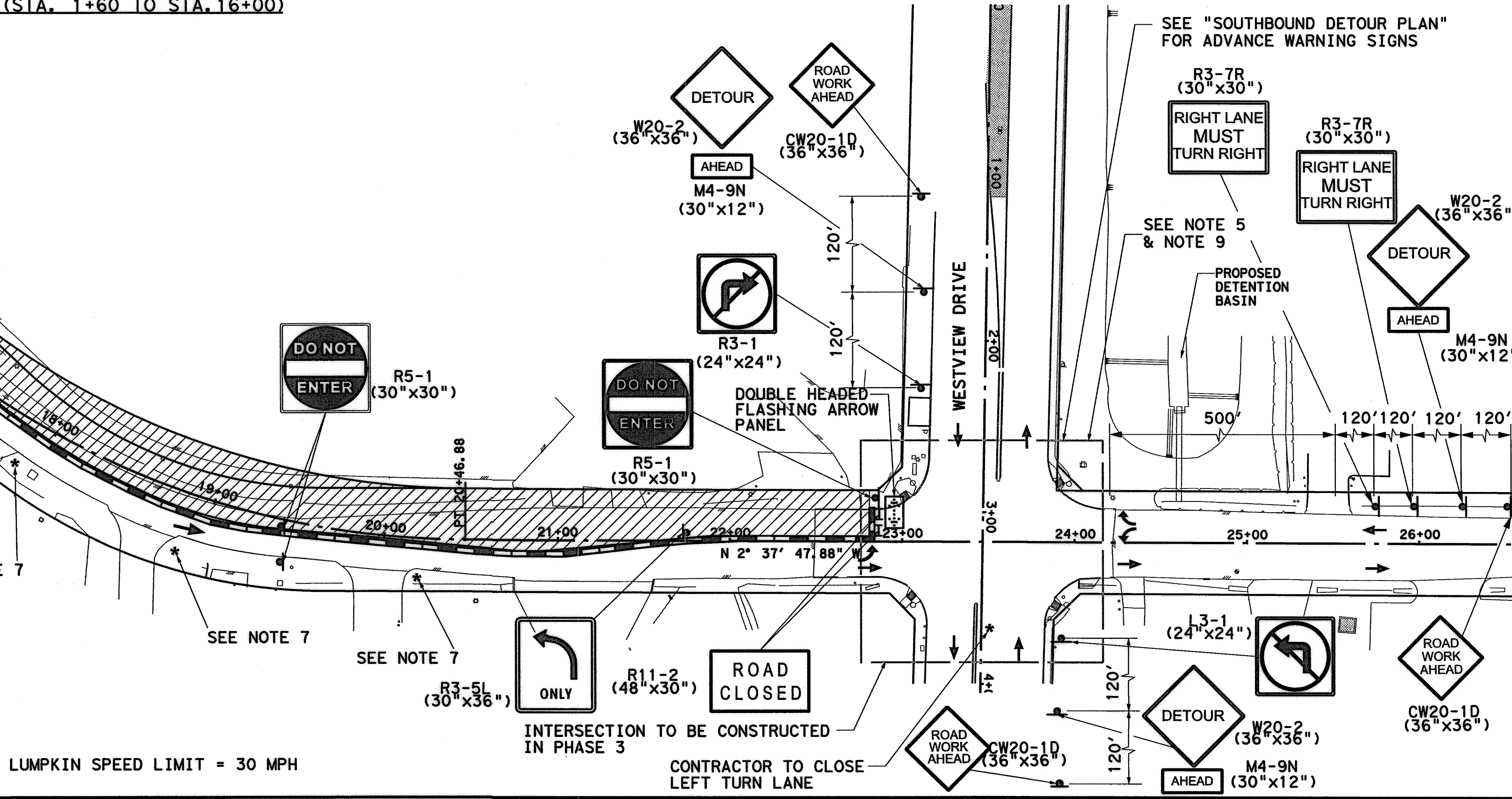
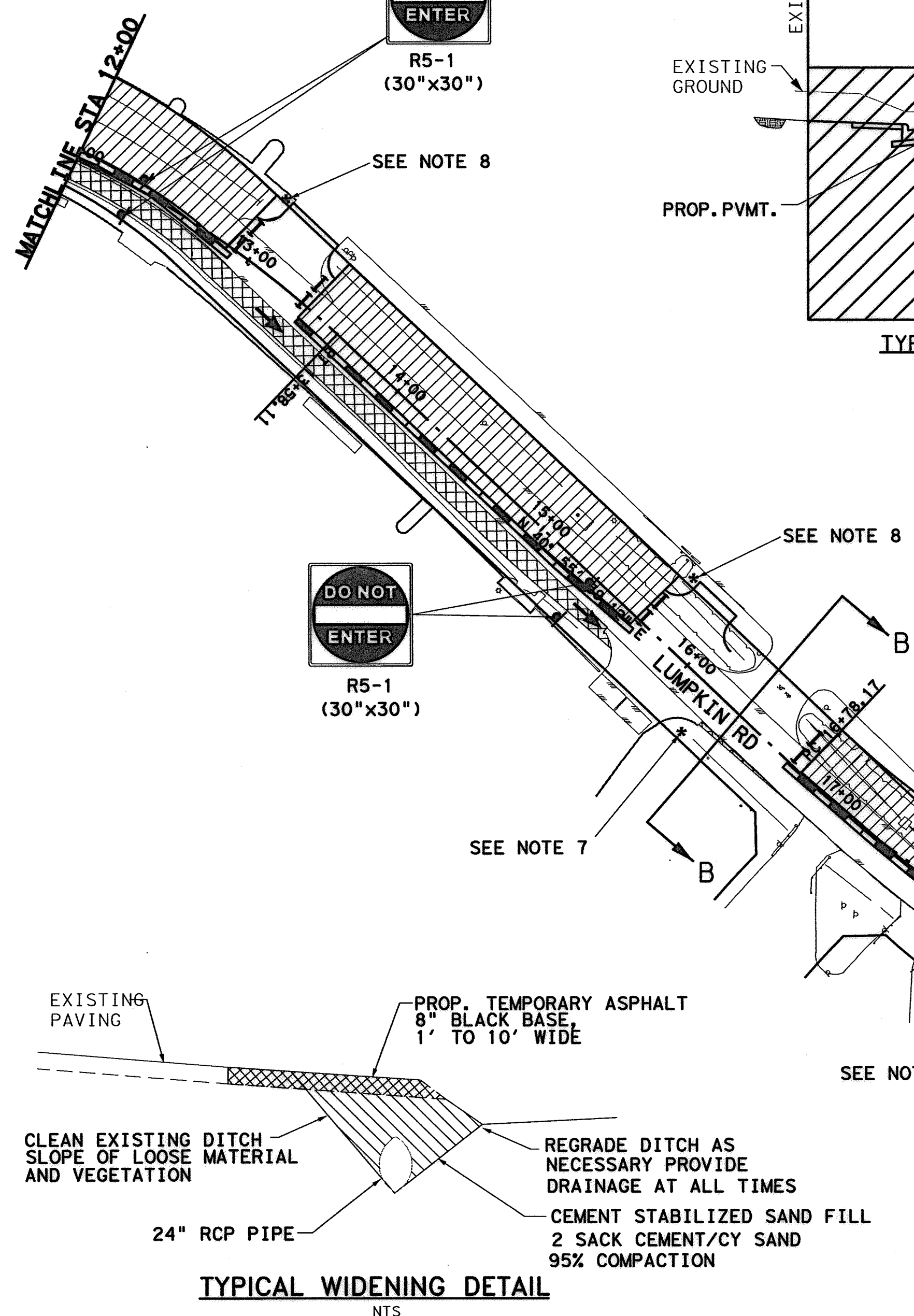
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SW
FILE NO.:	FACILITY	
DRAWING SCALE: 1"=60'	CITY DWG NO.	
HORIZ:		
SHEET: 117 OF 226		



USE TYPICAL TXDOT DETAIL "TRAFFIC CONTROL PLAN-LONG TERM LANE CLOSURES MULTILANE CONVENTIONAL ROADS" (TCP (2-5)-12)



- NOTES:**
- INSTALL TEMP. ASPHALT AS SHOWN PRIOR TO COMMENCING THIS PHASE.
  - INSTALL TEMPORARY 24-INCH RCP UNDER PROPOSED TEMPORARY ASPHALT AS NEEDED TO MAINTAIN DRAINAGE.
  - SET UP DETOUR FOR SB LUMPKIN.
  - PRIOR TO CONSTRUCTION ACROSS DRIVEWAY COORDINATE WITH PROPERTY OWNER TO PROVIDE ACCESS TO BUSINESS & RESIDENTS AT ALL TIMES.
  - REFER TO "TEMPORARY SIGNAL LAYOUT" FOR SIGNAL OPERATION DURING CONSTRUCTION.
  - HIGH EARLY STRENGTH CONCRETE SHALL BE USED ON ALL INTERSECTIONS & DRIVEWAYS.
  - SIGNS (R6-1R) WITH (L3-1) AND (R6-1L) WITH (R3-5L) TO BE PLACED AT ALL DRIVEWAYS ALONG THE EAST SIDE OF LUMPKIN ROAD.
  - SIGN (R3-5L) & (R-11) WITH (R3-1) & (R6-1L) SHALL BE PLACED AT ALL DRIVEWAYS ALONG THE WEST SIDE OF LUMPKIN ROAD.
  - CONTRACTOR TO RE-ALIGN TEMPORARY TRAFFIC SIGNAL HEADS AS NEEDED.
  - DUE TO VARYING ELEVATION DIFFERENCES AT DRIVEWAYS, CONTRACTOR TO COORDINATE COMPLETE CLOSURE/DETOUR OF DRIVEWAYS PRIOR TO CONSTRUCTION.
  - CONTRACTOR TO PROVIDE TEMPORARY PAVEMENT TRANSITIONS FOR DRIVEWAY ACCESS.



Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

**LUMPKIN ROAD  
N-T17000-0012-3  
TRAFFIC CONTROL PLAN  
PHASE 1**

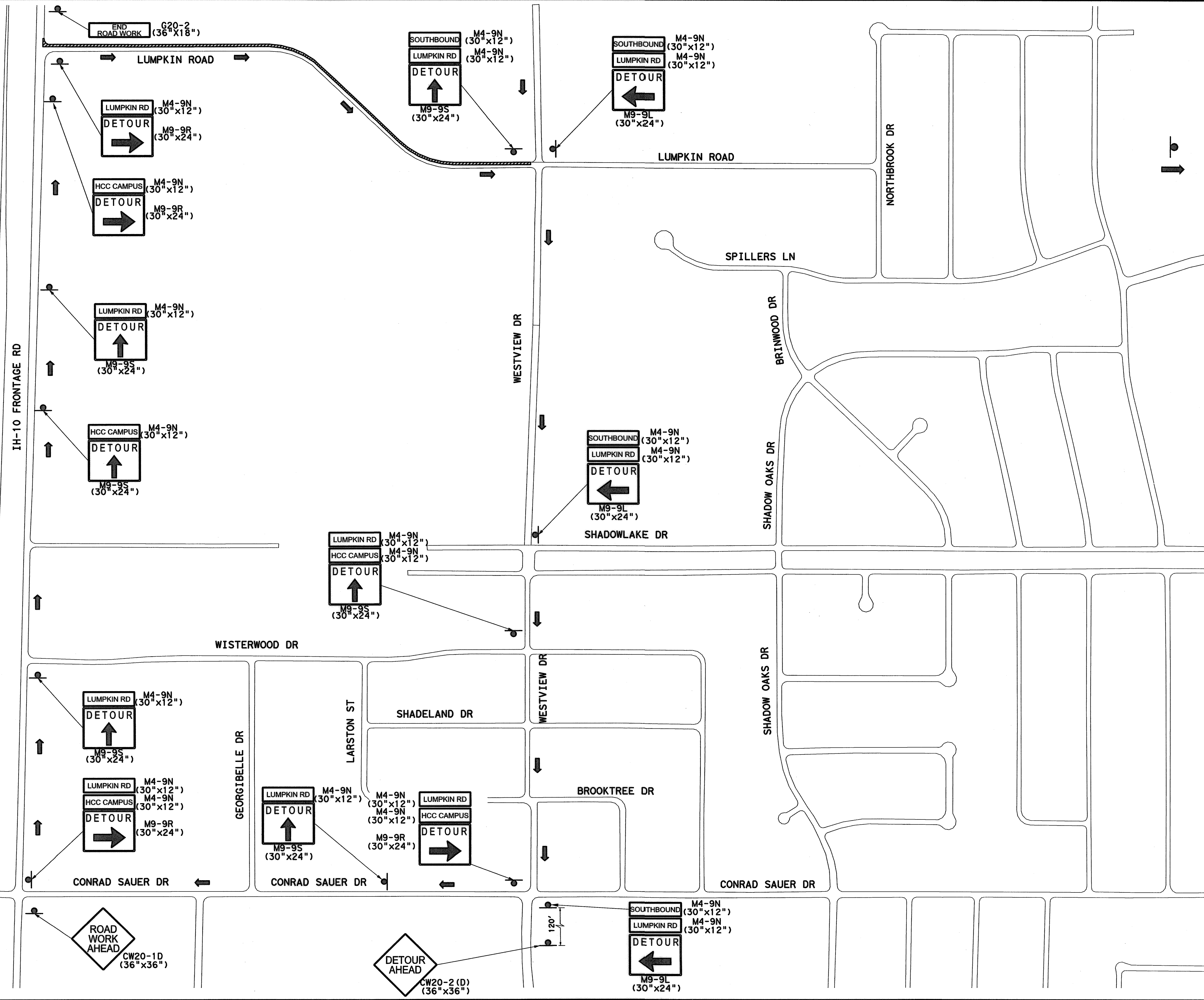
TCP-1

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO.:	FACILITY:
DRAWING SCALE:	CITY DWG. NO.
HORIZ: 1"=50'	
SHEET:	
118 OF 226	

APP. REVISIONS No. DATE No. DATE  
 9/4/2014 11:26:00 AM  
 MJC:hr:re  
 9/4/2014 9:45:20 AM  
 p:\l\adpw\_ladco\_int\project\se\Documents\Projects\130-10364-001\4-0-Product\01-4-0-Drawings\TCP\107-001-TCP-Phase 1.dgn



**LEGEND**

TEMP GROUND MOUNTED SIGNS

DIRECTION OF TRAFFIC

No.	DATE	REVISIONS	APP.

9-15-2017

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
SOUTHBOUND DETOUR PLAN  
PHASE 1 AND  
PHASE 3 STEP 3 TCP-D1

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

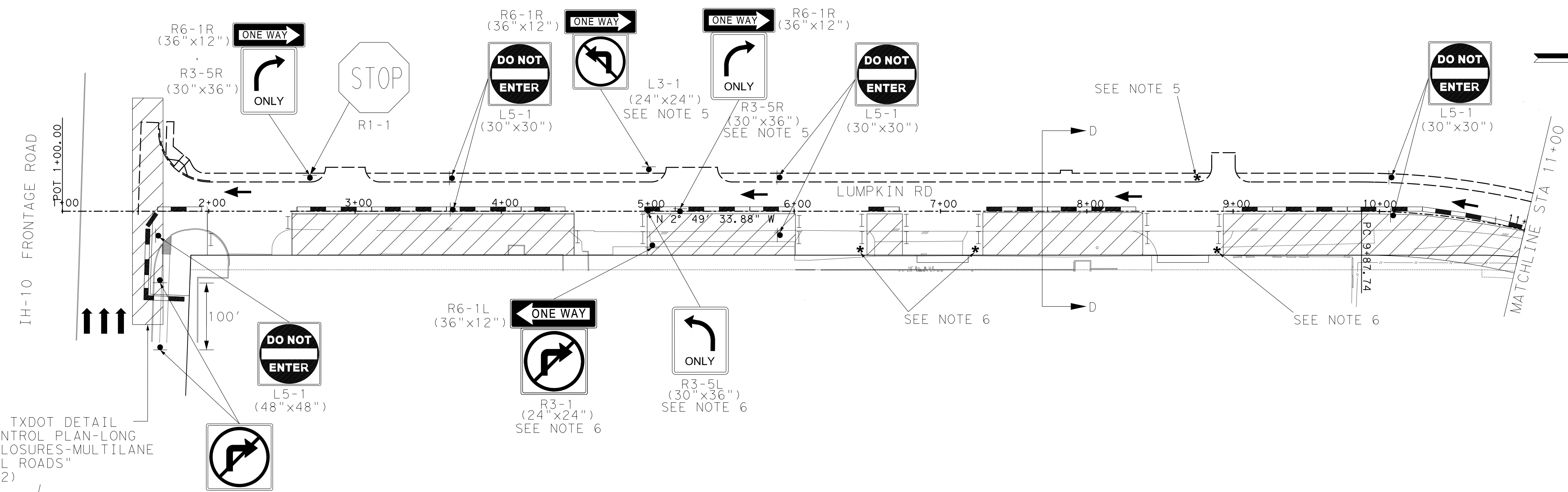
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
N. T. S.	
SHEET:	
119 OF 226	

Lockwood, Andrews & Newnam, Inc. \Projects\130-10384-201\4-9-Product\en4-01-Drawings\TCPA 106-001-TCR-D1-DETOUR.PLT .dgn 9/4/2014 11:26:13 AM MUGuthrie

No.	DATE	REVISIONS	APP.
1	10/31/14	ADDENDUM NO. 1	

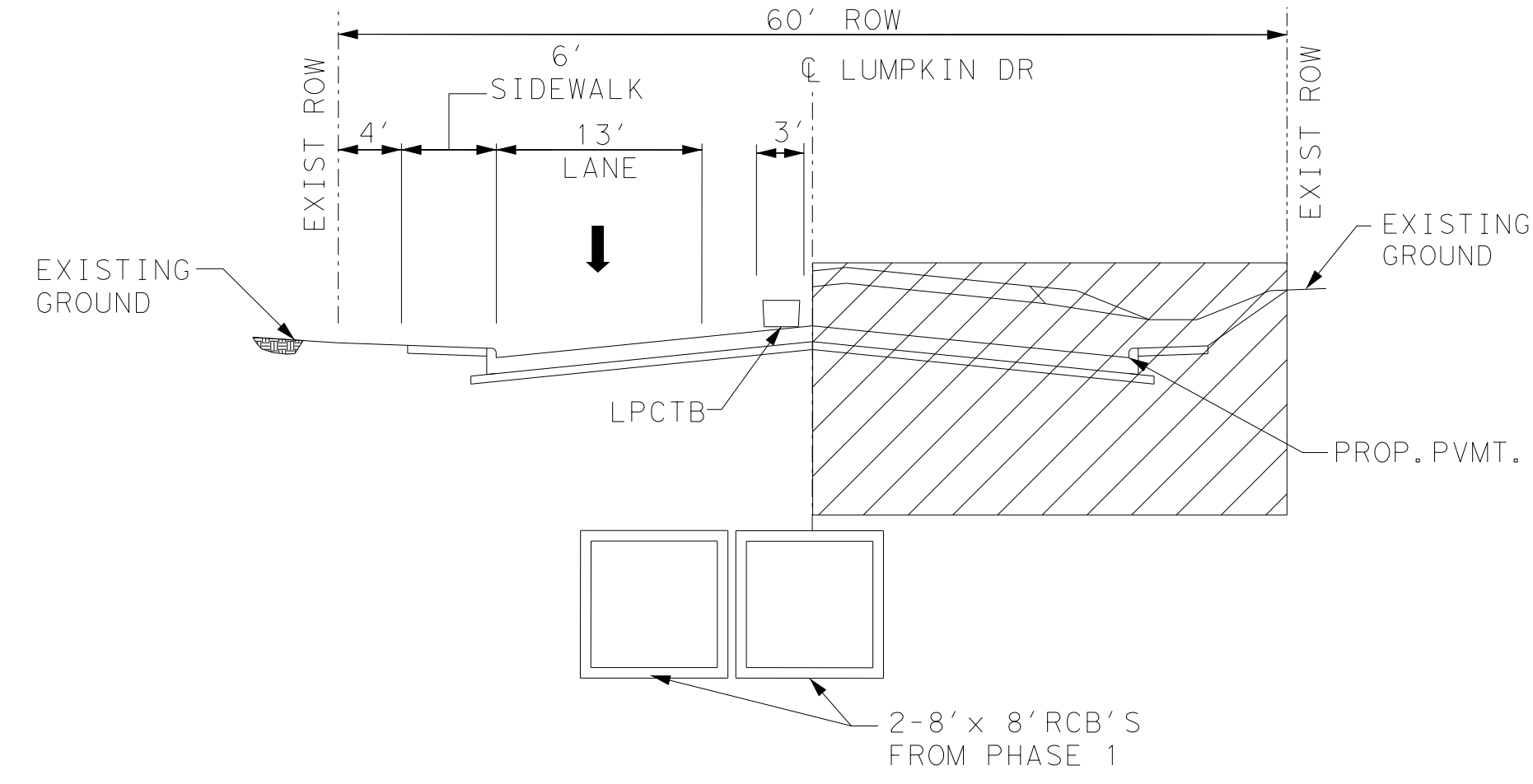
Egonzalez 12:39:47 PM 2/11/2015 2:11/2015 TCP-Phase 2.dgn



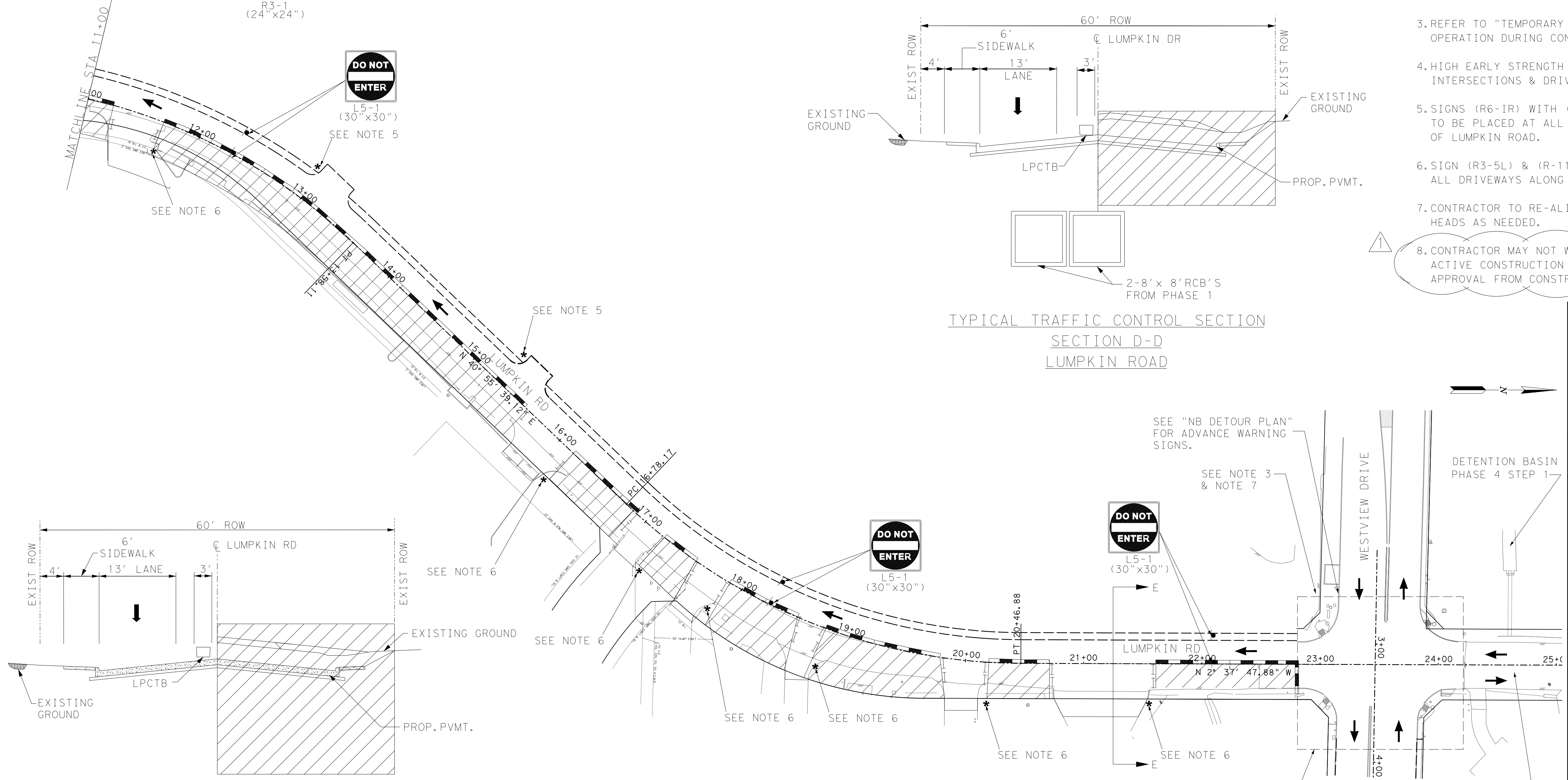
- LEGEND**
- TEMPORARY ASPHALT PAVEMENT
  - WORK ZONE
  - TYPE III BARRICADE W/ ROAD CLOSED SIGN
  - FLASHING ARROW PANEL
  - DRUMS
  - EXISTING STRIPING
  - TEMP GROUND MOUNTED SIGNS
  - DIRECTION OF TRAFFIC
  - TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER

USE TYPICAL TXDOT DETAIL "TRAFFIC CONTROL PLAN-LONG TERM LANE CLOSURES-MULTILANE CONVENTIONAL ROADS" (TCP (2-5) -12)

- NOTES:**
- SET UP DETOUR FOR SB LUMPKIN.
  - PRIOR TO CONSTRUCTION ACROSS DRIVEWAY COORDINATE WITH PROPERTY OWNER TO PROVIDE ACCESS TO BUSINESS & RESIDENTS AT ALL TIMES.
  - REFER TO "TEMPORARY SIGNAL LAYOUT" FOR SIGNAL OPERATION DURING CONSTRUCTION.
  - HIGH EARLY STRENGTH CONCRETE SHALL BE USED ON ALL INTERSECTIONS & DRIVEWAYS.
  - SIGNS (R6-1R) WITH (L3-1) AND (R6-1L) WITH (R3-5L) TO BE PLACED AT ALL DRIVEWAYS ALONG THE EAST SIDE OF LUMPKIN ROAD.
  - SIGN (R3-5L) & (R-11) WITH (R3-1) SHALL PLACED AT ALL DRIVEWAYS ALONG THE WEST SIDE OF LUMPKIN ROAD.
  - CONTRACTOR TO RE-ALIGN TEMPORARY TRAFFIC SIGNAL HEADS AS NEEDED.
  - CONTRACTOR MAY NOT WORK ON MORE THAN 800 LF OF ACTIVE CONSTRUCTION AT ANY TIME WITHOUT PRIOR APPROVAL FROM CONSTRUCTION MANAGER.



TYPICAL TRAFFIC CONTROL SECTION SECTION D-D LUMPKIN ROAD



TYPICAL TRAFFIC CONTROL SECTION SECTION E-E LUMPKIN ROAD

LUMPKIN SPEED LIMIT = 30 MPH

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
TRAFFIC CONTROL PLAN  
PHASE 2  
TCP-2

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

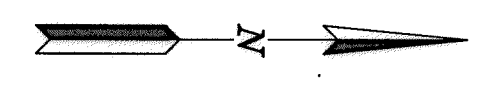
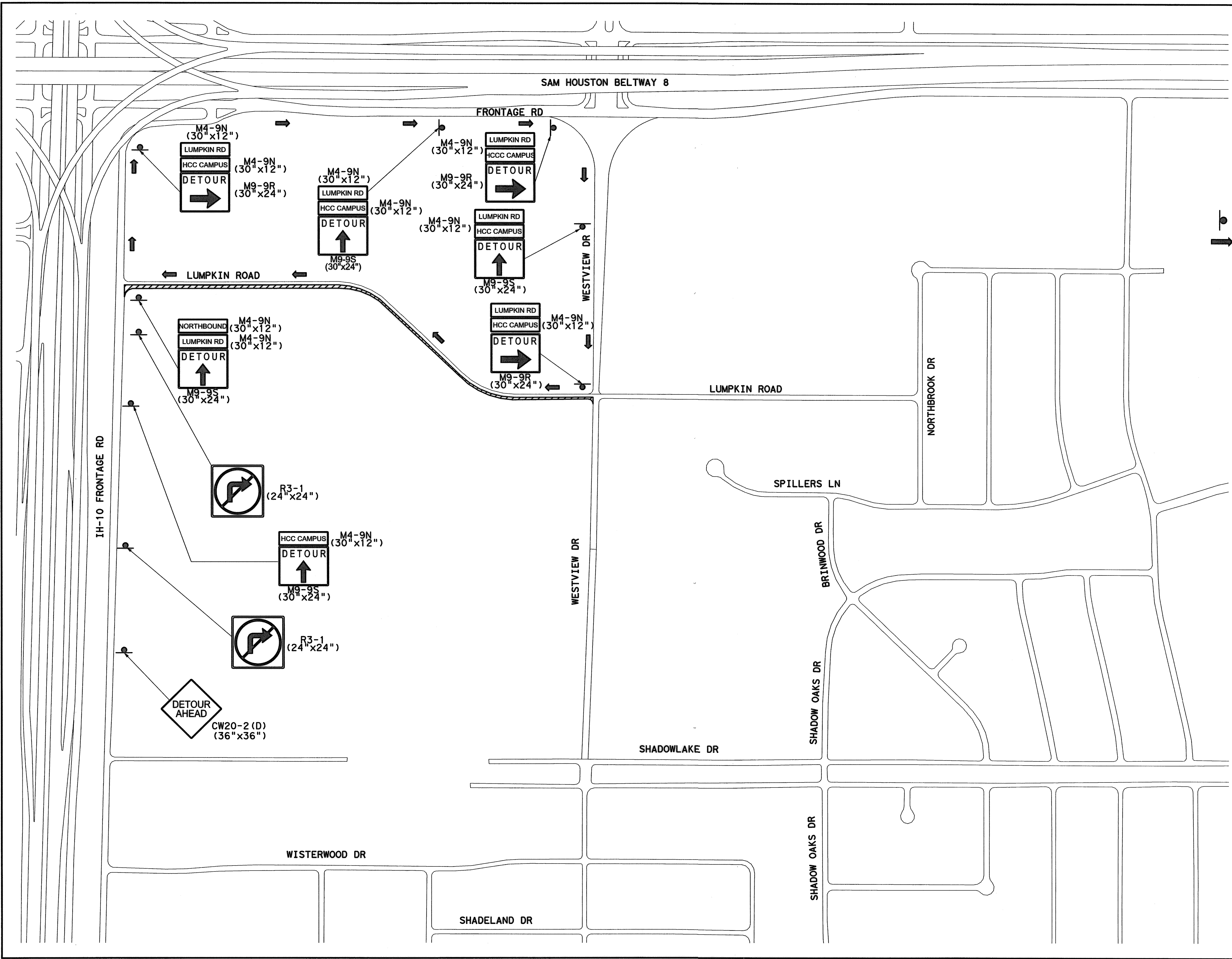
FILE NO. : FACILITY

DRAWING SCALE: CITY DWG NO.

HORIZ: 1"=50'

SHEET: 120 OF 226

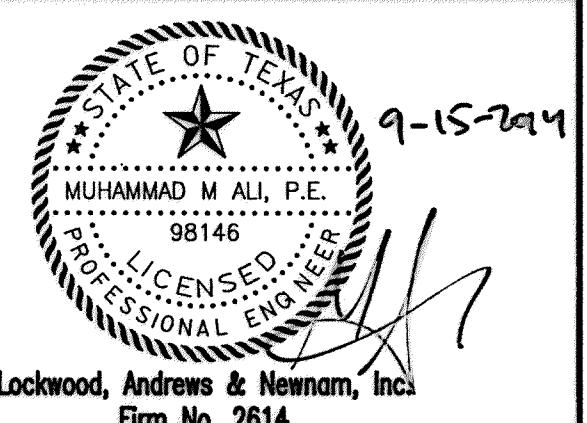




**LEGEND**

- TEMP GROUND MOUNTED SIGNS
- DIRECTION OF TRAFFIC

APP.	
REVISIONS	
DATE	
No.	



MEMORIAL CITY REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

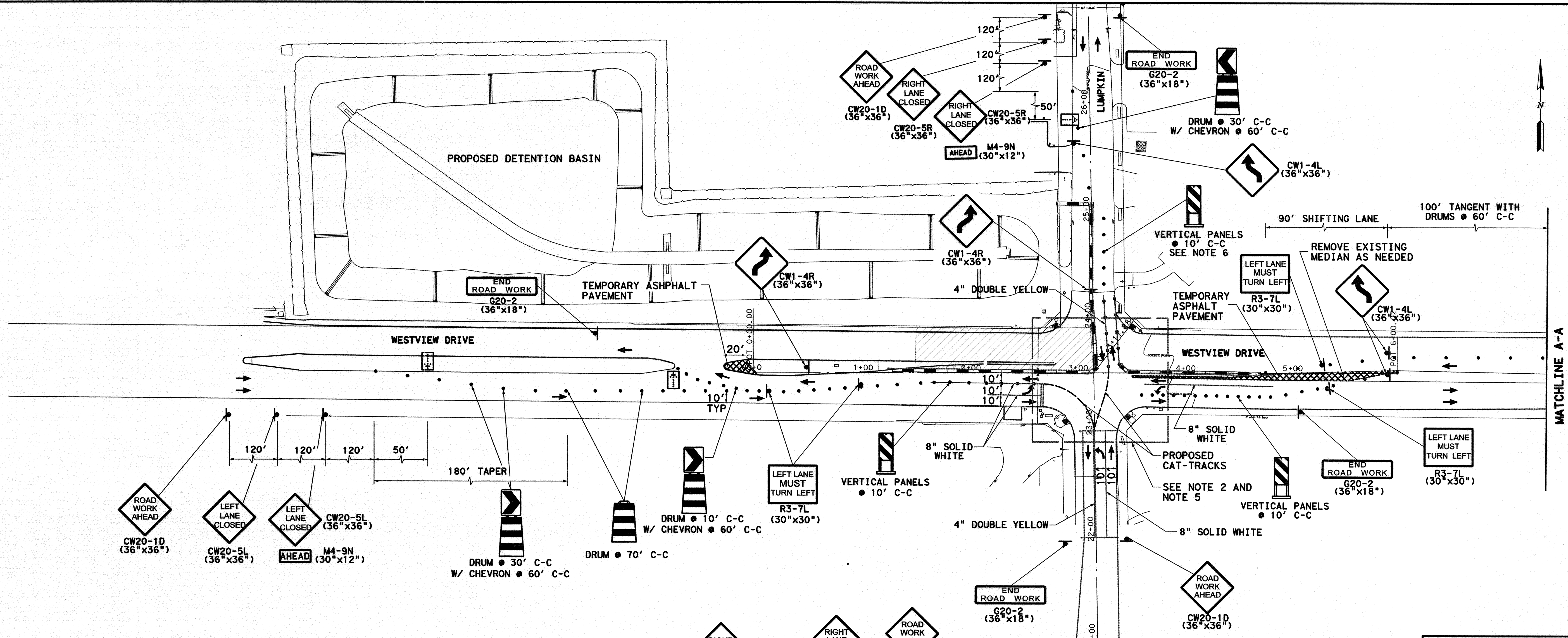
LUMPKIN ROAD  
N-T17000-0012-3  
NORTHBOUND DETOUR PLAN  
PHASE 2 AND  
PHASE 3 STEP 4 TCP-D2

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

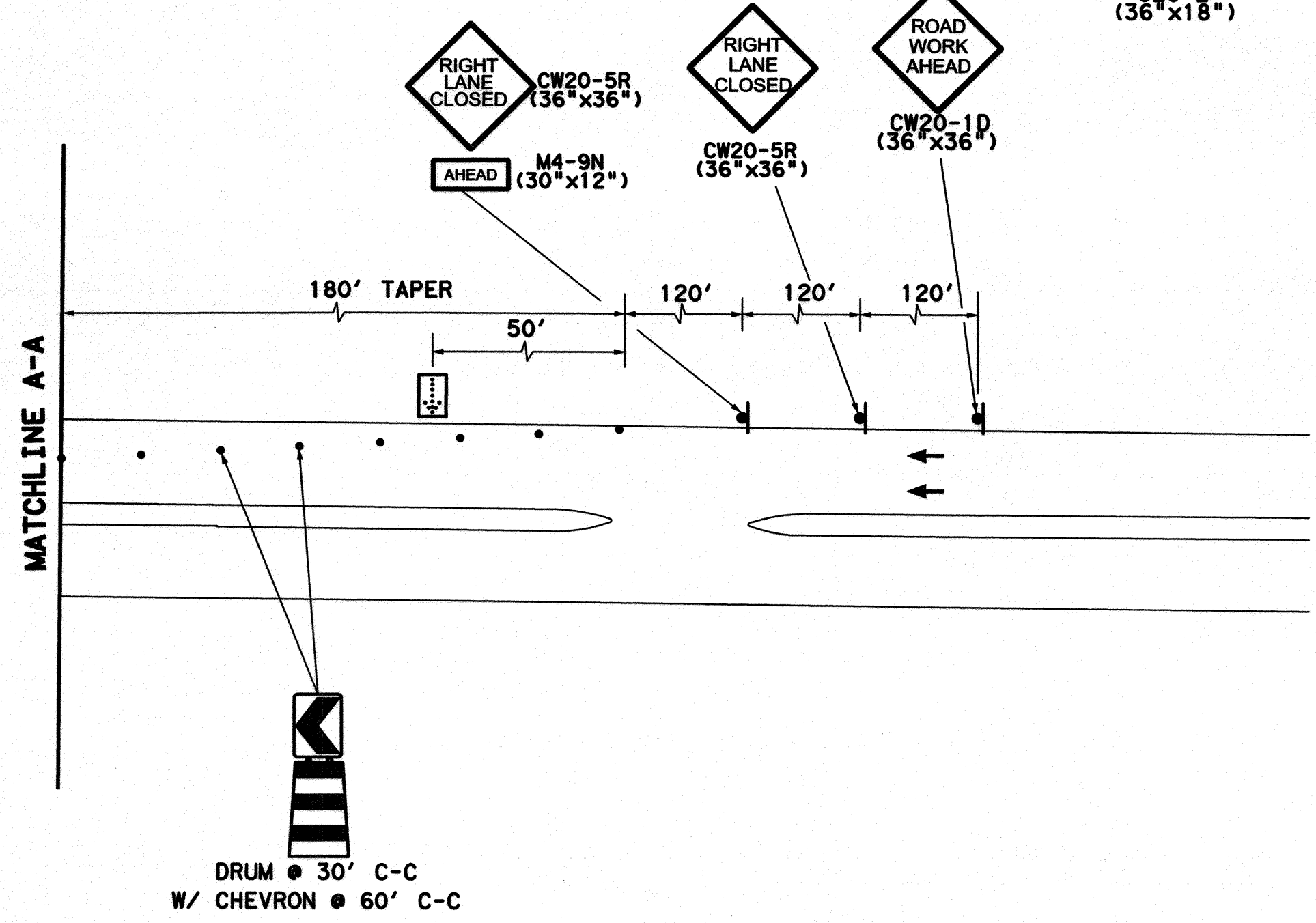
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
N. T. S.		
SHEET:	121 OF 226	

9/4/2014 11:26:40 AM MUGuthrie  
 p:\projects\130-10384-001\4-0-Product\101-TCP-D2-DETOUR PH2.dgn

No.	DATE	REVISIONS	APP.



- LEGEND**
- TEMPORARY ASPHALT PAVEMENT
  - WORK ZONE
  - TYPE III BARRICADE W/ ROAD CLOSED SIGN
  - FLASHING ARROW PANEL
  - DRUMS
  - EXISTING STRIPING
  - TEMP GROUND MOUNTED SIGNS
  - DIRECTION OF TRAFFIC
  - TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER



- NOTES:**
- PRIOR TO CONSTRUCTION ACROSS DRIVEWAY COORDINATE WITH PROPERTY OWNER TO PROVIDE ACCESS TO BUSINESS & RESIDENTS AT ALL TIMES.
  - REFER TO "TEMPORARY SIGNAL LAYOUT" FOR SIGNAL OPERATION DURING CONSTRUCTION.
  - HIGH EARLY STRENGTH CONCRETE SHALL BE USED ON ALL INTERSECTIONS & DRIVEWAYS.
  - CONTRACTOR TO RESTORE MEDIANS ONCE PHASE THREE IS COMPLETE.
  - CONTRACTOR TO REALIGN TEMPORARY TRAFFIC SIGNALS AS NEEDED.
  - CONTRACTOR MAY USE TEMPORARY RAISED YELLOW PAVEMENT MARKERS INSTEAD OF VERTICAL PANELS PER PROJECT MANAGERS APPROVAL.
  - CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES TO LANDSCAPE/IRRIGATION SYSTEM WITHIN MEDIANS. NO SEPARATE PAY.

WESTVIEW SPEED LIMIT = 30 MPH

10-21-2014

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2814

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
TRAFFIC CONTROL PLAN  
PHASE 3 - STEP 1

TCP-3S1

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

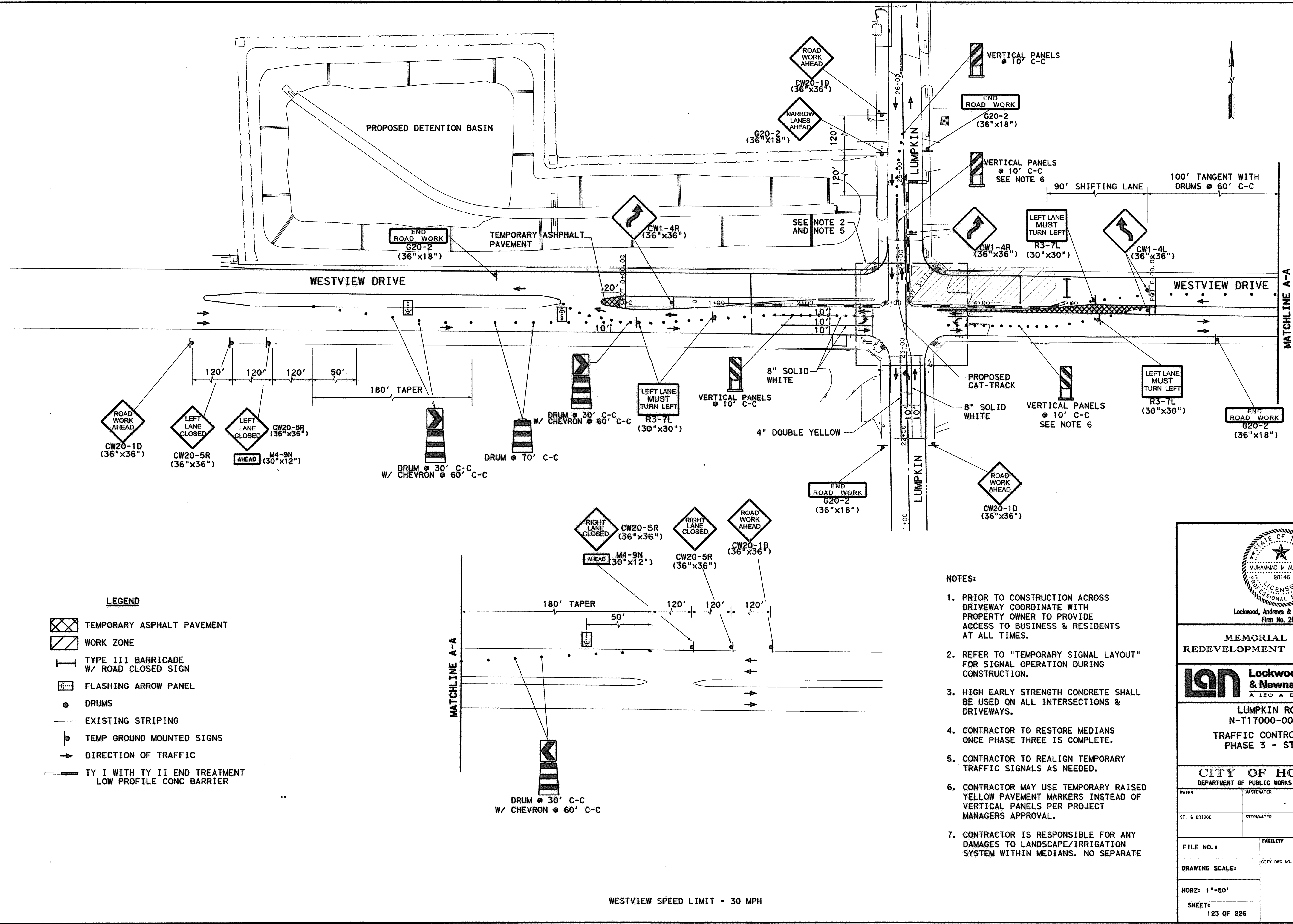
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SRG

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DNG NO.
HORIZ: 1"=50'	
SHEET:	
122 OF 226	

10/20/2014 10:35:25 AM MUGuthrie  
 p:\laddpw\_laddo\_intl\projectwise\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\TCP-111-001-TCP-Phase 3-Step 1.dgn

No.	DATE	REVISIONS

9/4/2014 11:27:24 AM MUGhr-tc  
 p:\projects\130-10384-001\4-0-Product\en\4-01-Drawing\130-10384-001-112-901-TCP-Phase 3-Step 2.dgn



**LEGEND**

- TEMPORARY ASPHALT PAVEMENT
- WORK ZONE
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW PANEL
- DRUMS
- EXISTING STRIPING
- TEMP GROUND MOUNTED SIGNS
- DIRECTION OF TRAFFIC
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER

**NOTES:**

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY COORDINATE WITH PROPERTY OWNER TO PROVIDE ACCESS TO BUSINESS & RESIDENTS AT ALL TIMES.
2. REFER TO "TEMPORARY SIGNAL LAYOUT" FOR SIGNAL OPERATION DURING CONSTRUCTION.
3. HIGH EARLY STRENGTH CONCRETE SHALL BE USED ON ALL INTERSECTIONS & DRIVEWAYS.
4. CONTRACTOR TO RESTORE MEDIANS ONCE PHASE THREE IS COMPLETE.
5. CONTRACTOR TO REALIGN TEMPORARY TRAFFIC SIGNALS AS NEEDED.
6. CONTRACTOR MAY USE TEMPORARY RAISED YELLOW PAVEMENT MARKERS INSTEAD OF VERTICAL PANELS PER PROJECT MANAGERS APPROVAL.
7. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES TO LANDSCAPE/IRRIGATION SYSTEM WITHIN MEDIANS. NO SEPARATE

9-15-2014  
 Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

---

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

---

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

---

LUMPKIN ROAD  
 N-T17000-0012-3  
**TRAFFIC CONTROL PLAN  
 PHASE 3 - STEP 2**

**TCP-352**

---

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWO

---

FILE NO.:

DRAWING SCALE:

HORZ: 1"=50'

SHEET: 123 OF 226

WESTVIEW SPEED LIMIT = 30 MPH

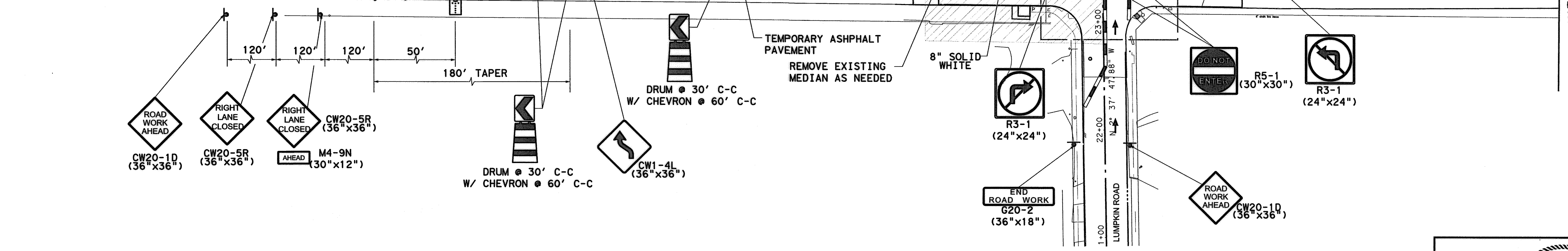
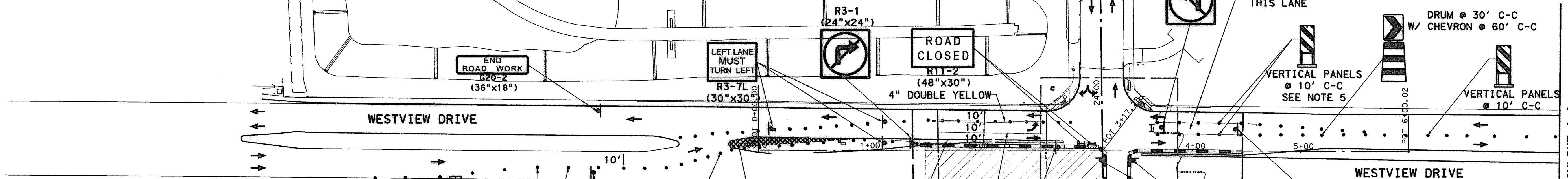
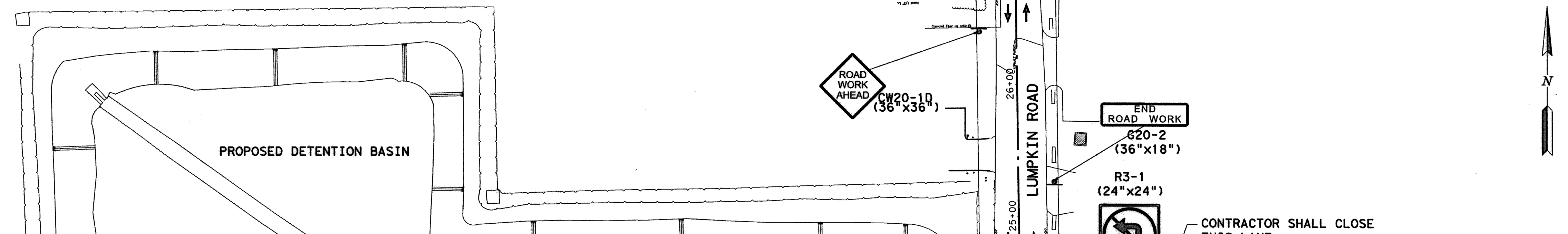
No.	DATE	REVISIONS

MUAuthr:ie  
11-27-85 AM

9/4/2014

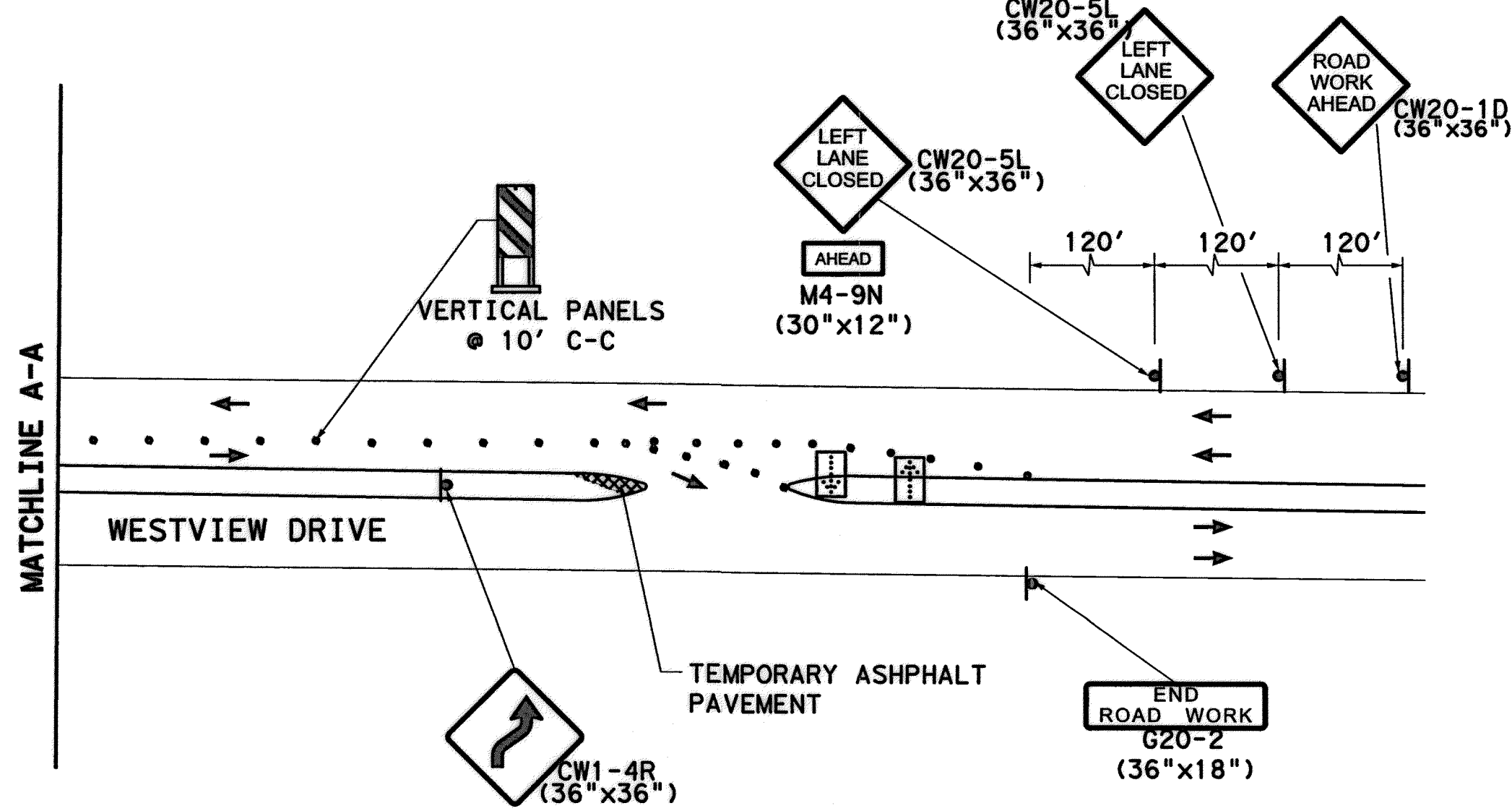
3-Step 3.dgn

TCP-Phase 3-Step 3.dwg



**LEGEND**

	TEMPORARY ASPHALT PAVEMENT
	WORK ZONE
	TYPE III BARRICADE W/ ROAD CLOSED SIGN
	FLASHING ARROW PANEL
	DRUMS
	EXISTING STRIPING
	TEMP GROUND MOUNTED SIGNS
	DIRECTION OF TRAFFIC
	TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER



- NOTES:**
1. SETUP "SOUTH BOUND DETOUR" PRIOR TO COMMENCING THIS PHASE.
  2. SEE SHEET "SOUTHBOUND DETOUR PLAN" FOR DETAILS.
  3. CONTRACTOR TO RESTORE MEDIANS ONCE PHASE THREE IS COMPLETE.
  4. CONTRACTOR TO REALIGN TEMPORARY TRAFFIC SIGNALS AS NEEDED.
  5. CONTRACTOR MAY USE TEMPORARY RAISED YELLOW PAVEMENT MARKERS INSTEAD OF VERTICAL PANELS PER PROJECT MANAGER'S APPROVAL.
  6. HIGH EARLY STRENGTH CONCRETE SHALL BE USED ON ALL INTERSECTIONS AND DRIVEWAYS.
  7. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES TO LANDSCAPE/IRRIGATION SYSTEM WITHIN MEDIANS. NO SEPARATE PAY.

WESTVIEW SPEED LIMIT = 30 MPH

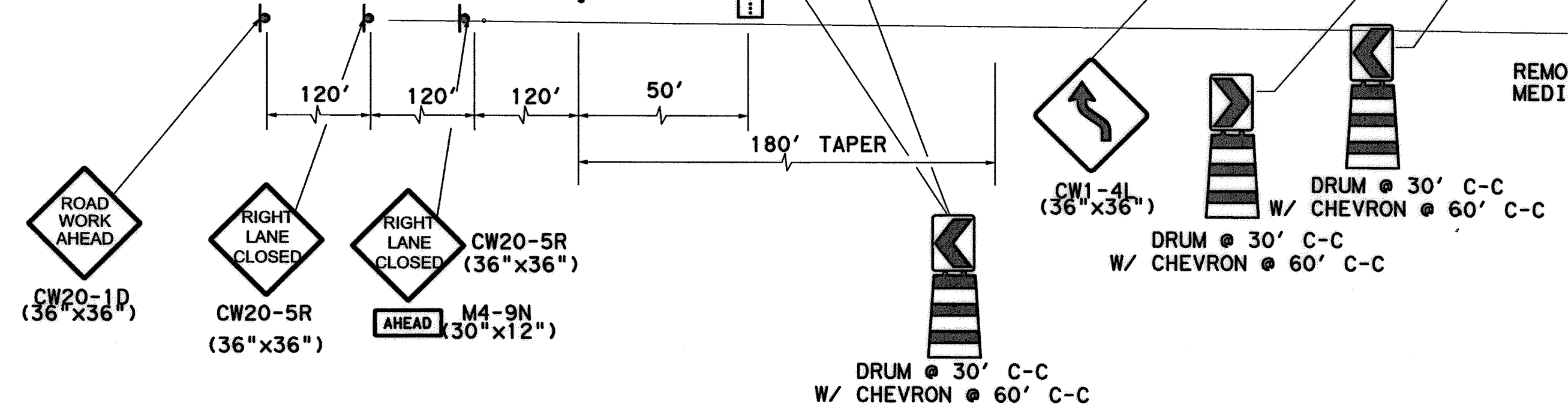
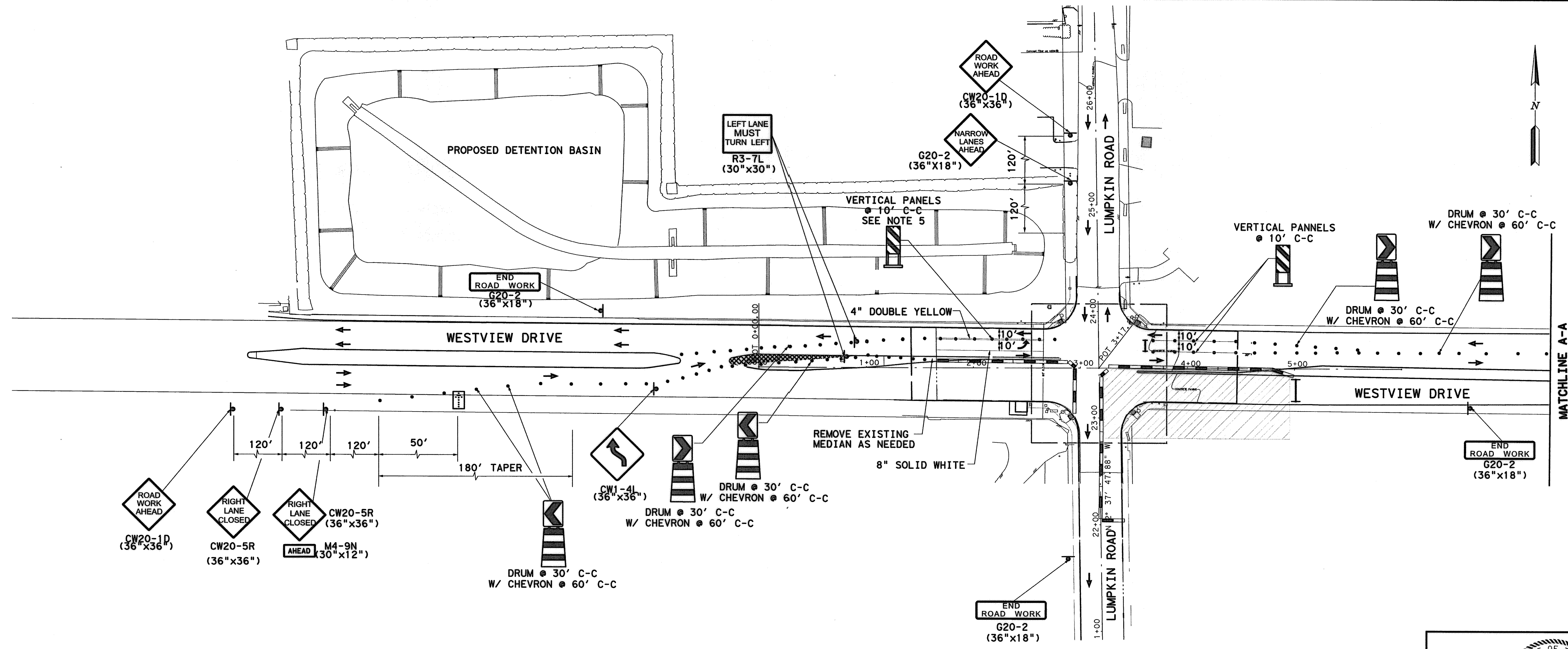
**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

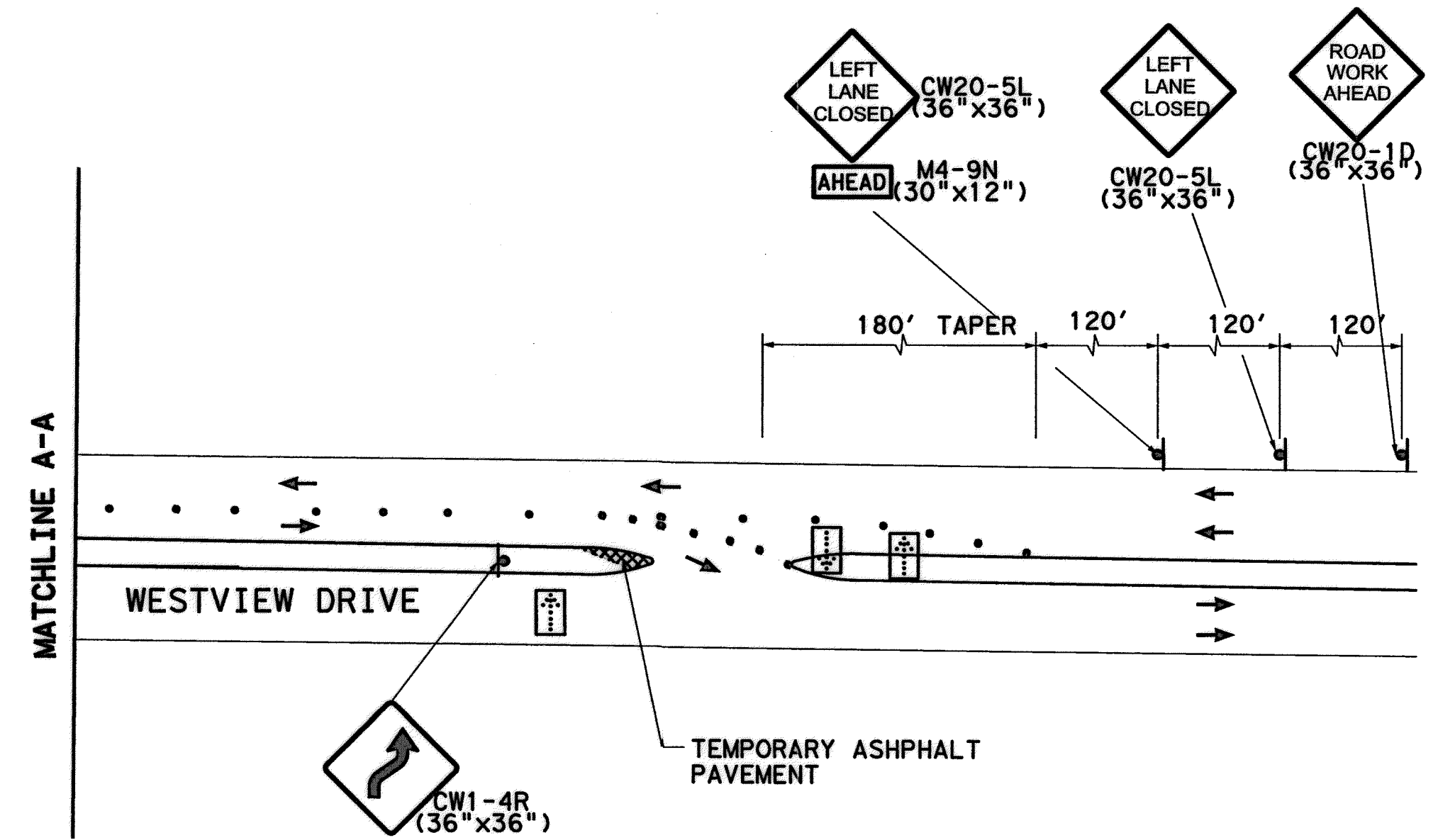
LUMPKIN ROAD  
N-T17000-0012-3  
TRAFFIC CONTROL PLAN  
PHASE 3 - STEP 3  
TCP-3S3

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
HORZ: 1"=50'		
SHEET:	124 OF 226	

APP.	
REVISIONS	
No.	
DATE	



- LEGEND**
- TEMPORARY ASPHALT PAVEMENT
  - WORK ZONE
  - TYPE III BARRICADE W/ ROAD CLOSED SIGN
  - FLASHING ARROW PANEL
  - DRUMS
  - EXISTING STRIPING
  - TEMP GROUND MOUNTED SIGNS
  - DIRECTION OF TRAFFIC
  - TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER



- NOTES:**
1. SETUP "SOUTH BOUND DETOUR" PRIOR TO COMMENCING THIS PHASE.
  2. SEE SHEET "SOUTHBOUND DETOUR PLAN" FOR DETAILS.
  3. CONTRACTOR TO RESTORE MEDIANS ONCE PHASE THREE IS COMPLETE.
  4. CONTRACTOR TO REALIGN TEMPORARY TRAFFIC SIGNALS AS NEEDED.
  5. CONTRACTOR MAY USE TEMPORARY RAISED YELLOW PAVEMENT MARKERS INSTEAD OF VERTICAL PANELS PER PROJECT MANAGER'S APPROVAL.
  6. HIGH EARLY STRENGTH CONCRETE SHALL BE USED ON ALL INTERSECTIONS AND DRIVEWAYS.
  7. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES TO LANDSCAPE/IRRIGATION SYSTEM WITHIN MEDIANS. NO SEPARATE PAY.

WESTVIEW SPEED LIMIT = 30 MPH

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

---

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

---

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

---

LUMPKIN ROAD  
N-T17000-0012-3  
**TRAFFIC CONTROL PLAN**  
PHASE 3 - STEP 4

TCP-354

---

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

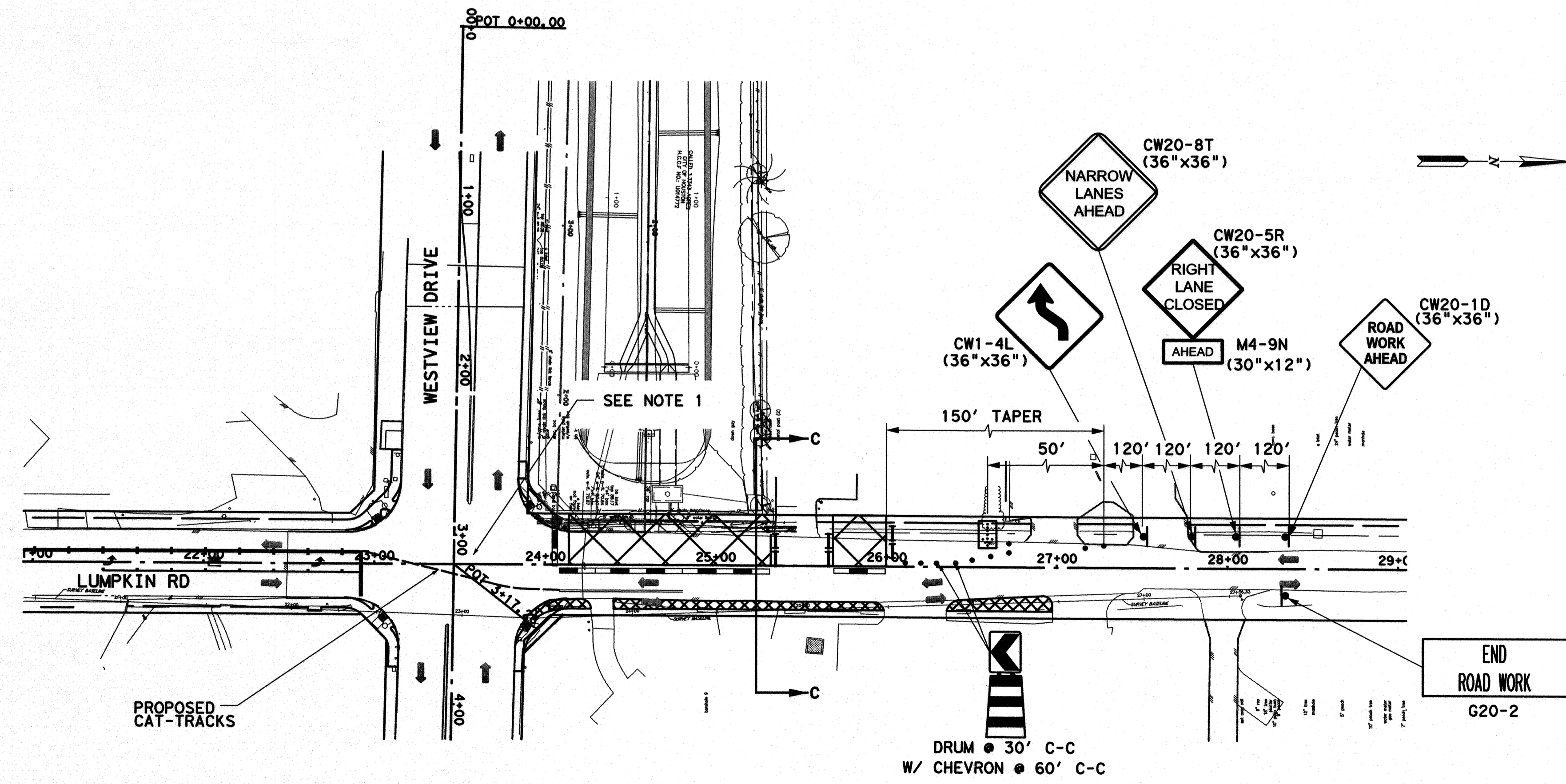
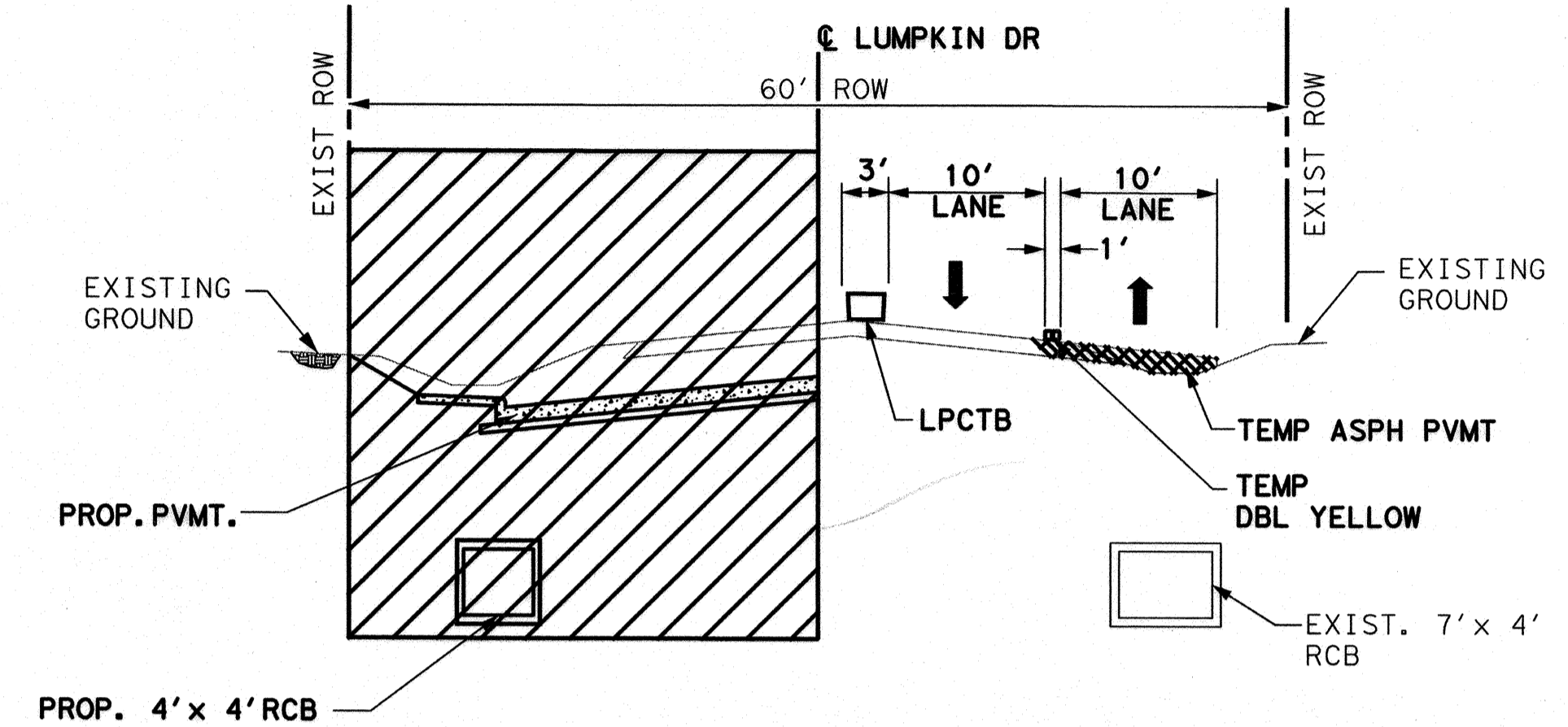
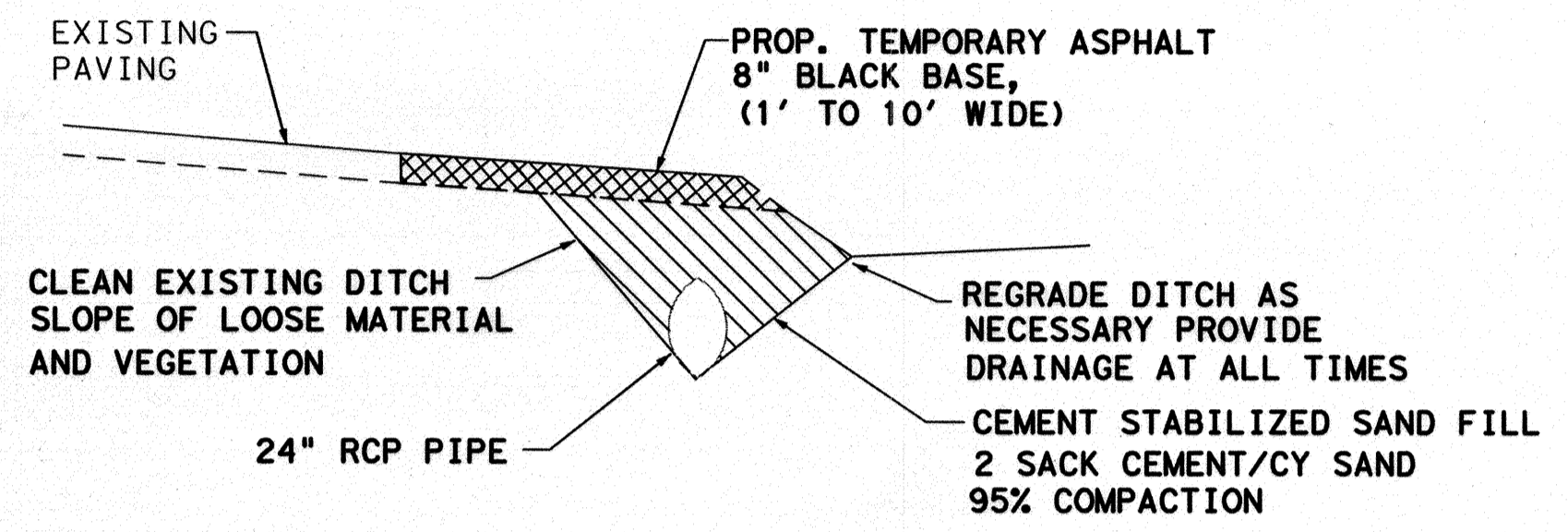
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG NO.
HORZ: 1"=50'		
SHEET:		
125 OF 226		

9/4/2014 11:28:20 AM M:\guthrie 130-10384-001\4-0-Production\4-01-Drawings\TCP\114-001-TCP-Phase 3-Step 4.dgn

REV	DATE	DESCRIPTION

- LEGEND**
- TEMPORARY ASPHALT PAVEMENT
  - WORK ZONE
  - WORK ZONE
  - TYPE III BARRICADE W/ ROAD CLOSED SIGN
  - FLASHING ARROW PANEL
  - DRUMS
  - EXISTING STRIPING
  - TEMP GROUND MOUNTED SIGNS
  - DIRECTION OF TRAFFIC
  - TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER

- NOTES:**
1. TRANSITION SOUTHBOUND TRAFFIC THROUGH INTERSECTION ONTO NEW LUMPKIN ROAD, SOUTH OF WESTVIEW.
  2. DO NOT CONSTRUCT PROPOSED CURB OR SIDEWALK (WEST SIDE) UNTIL AFTER PHASE 5.
  3. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY COORDINATE WITH PROPERTY OWNER TO PROVIDE ACCESS TO BUSINESS & RESIDENTS AT ALL TIMES.
  4. REFER TO "TEMPORARY SIGNAL LAYOUT" FOR SIGNAL OPERATION DURING CONSTRUCTION.
  5. INSTALL 5' (+/-) TEMP. ASPHALT ALONG WEST EDGE OF NEW CONCRETE.
  6. HIGH EARLY STRENGTH CONCRETE SHALL BE USED ON ALL INTERSECTIONS & DRIVEWAYS.
  7. BASIN CONSTRUCTION CAN BE CONCURRENT WITH PHASE 2.



LUMPKIN SPEED LIMIT = 30 MPH

10-21-2014

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

**LUMPKIN ROAD**  
N-T17000-0012-3

**TRAFFIC CONTROL PLAN**  
PHASE 4 STEP 1

TCP-4S1

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO. 1

DRAWING SCALE:

VERT: 1"=50'

HORIZ: 1"=50'

SHEET: 126 OF 226









FACILITY

CITY DWG NO.

M:\adpw\adcoo\intst\proj\wise\Documents\Proj\Jects\130-10384-001\4-01-Drawings\TCP\115-001-TCP-Phase 4 Step 1.dgn 10/20/2014 10:34:05 AM MUGhr1e

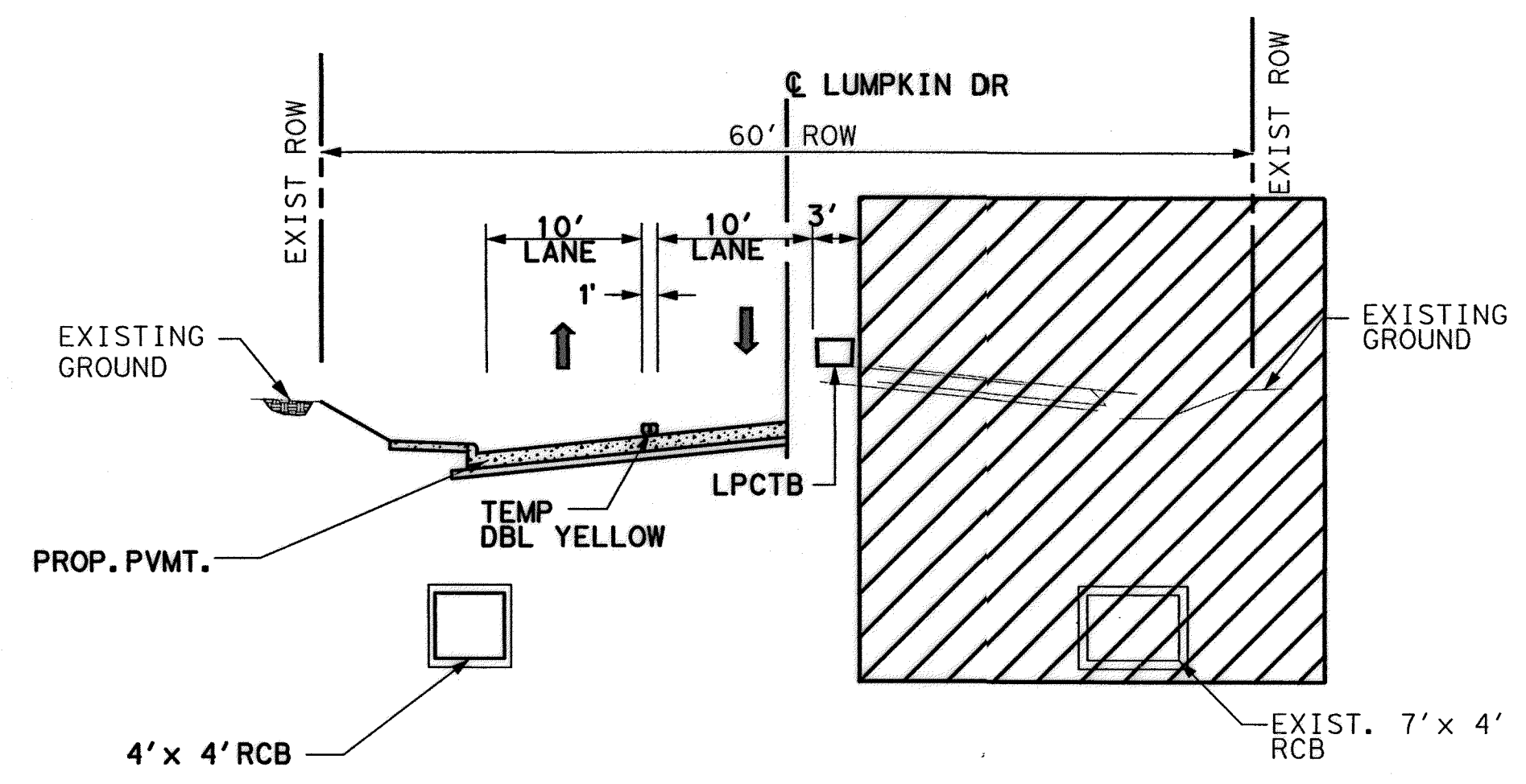
APP. REVISIONS DATE No.

**LEGEND**

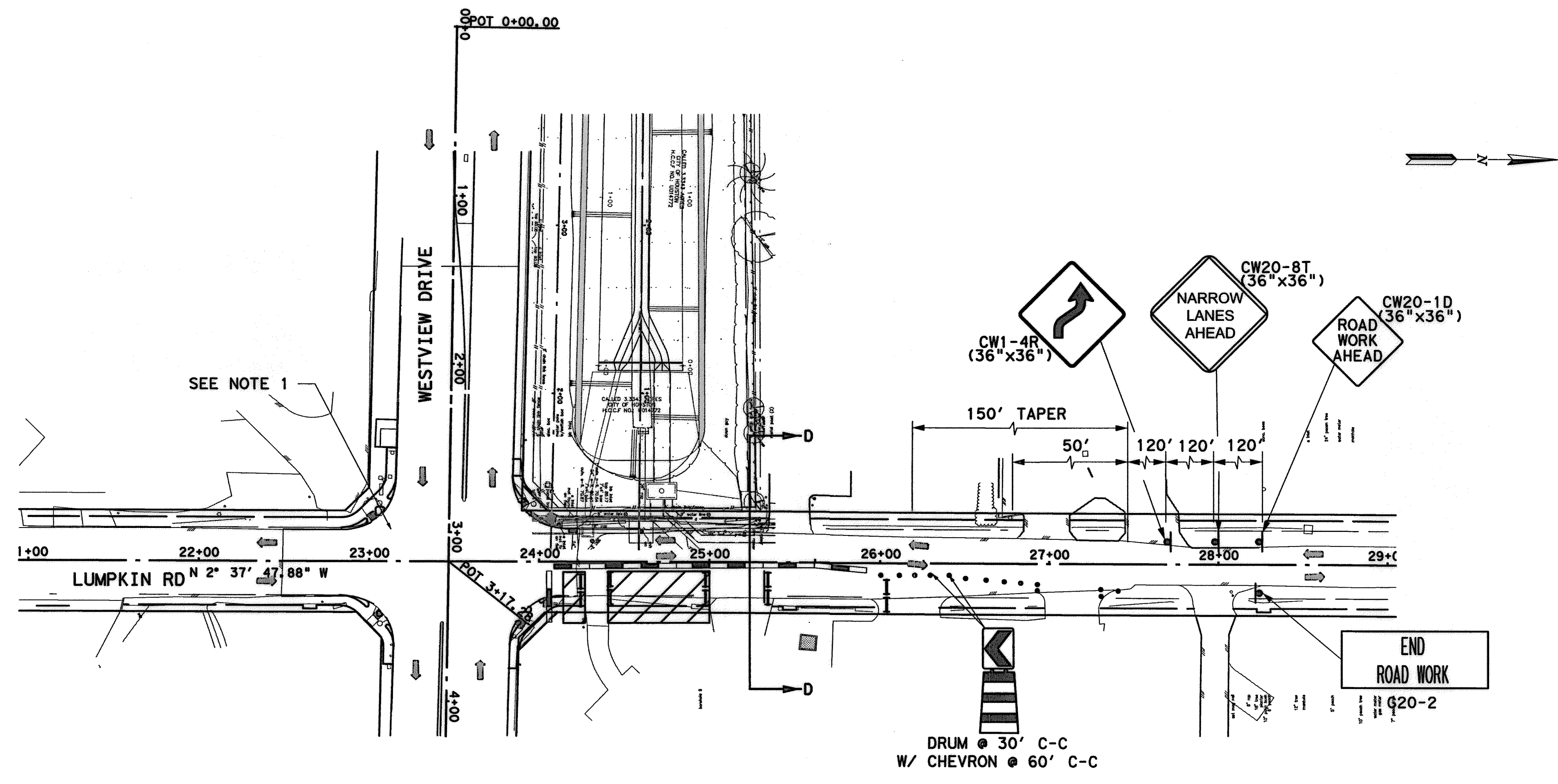
-  WORK ZONE
-  TYPE III BARRICADE W/ ROAD CLOSED SIGN
-  FLASHING ARROW PANEL
-  DRUMS
-  EXISTING STRIPING
-  TEMP GROUND MOUNTED SIGNS
-  DIRECTION OF TRAFFIC
-  TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER

**NOTES:**

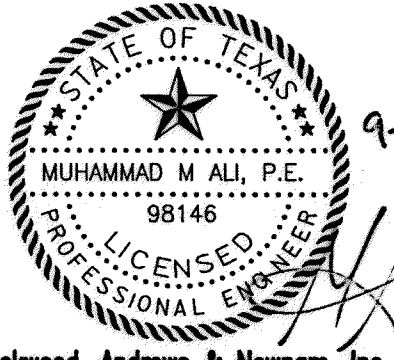
1. TRANSITION SOUTHBOUND TRAFFIC THROUGH INTERSECTION ONTO NEW LUMPKIN ROAD, SOUTH OF WESTVIEW.
2. DO NOT CONSTRUCT PROPOSED CURB OR SIDEWALK (WEST SIDE) UNTIL AFTER THIS STEP.
3. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY COORDINATE WITH PROPERTY OWNER TO PROVIDE ACCESS TO BUSINESS & RESIDENTS AT ALL TIMES.
4. REFER TO "TEMPORARY SIGNAL LAYOUT" FOR SIGNAL OPERATION DURING CONSTRUCTION.
5. HIGH EARLY STRENGTH CONCRETE SHALL BE USED ON ALL INTERSECTIONS & DRIVEWAYS.
6. BASIN CONSTRUCTION CAN BE CONCURRENT WITH PHASE 2.



**TYPICAL TRAFFIC CONTROL SECTION  
SECTION D-D  
LUMPKIN ROAD  
(STA. 24+30 TO STA. 26+00)**



LUMPKIN SPEED LIMIT = 30 MPH



Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

---

**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

---

**Lockwood, Andrews  
& Newnam, Inc.**  
A LEO A DALY COMPANY

---

LUMPKIN ROAD  
N-T17000-0012-3  
TRAFFIC CONTROL PLAN  
PHASE 4 STEP 2  
TCP-452

---

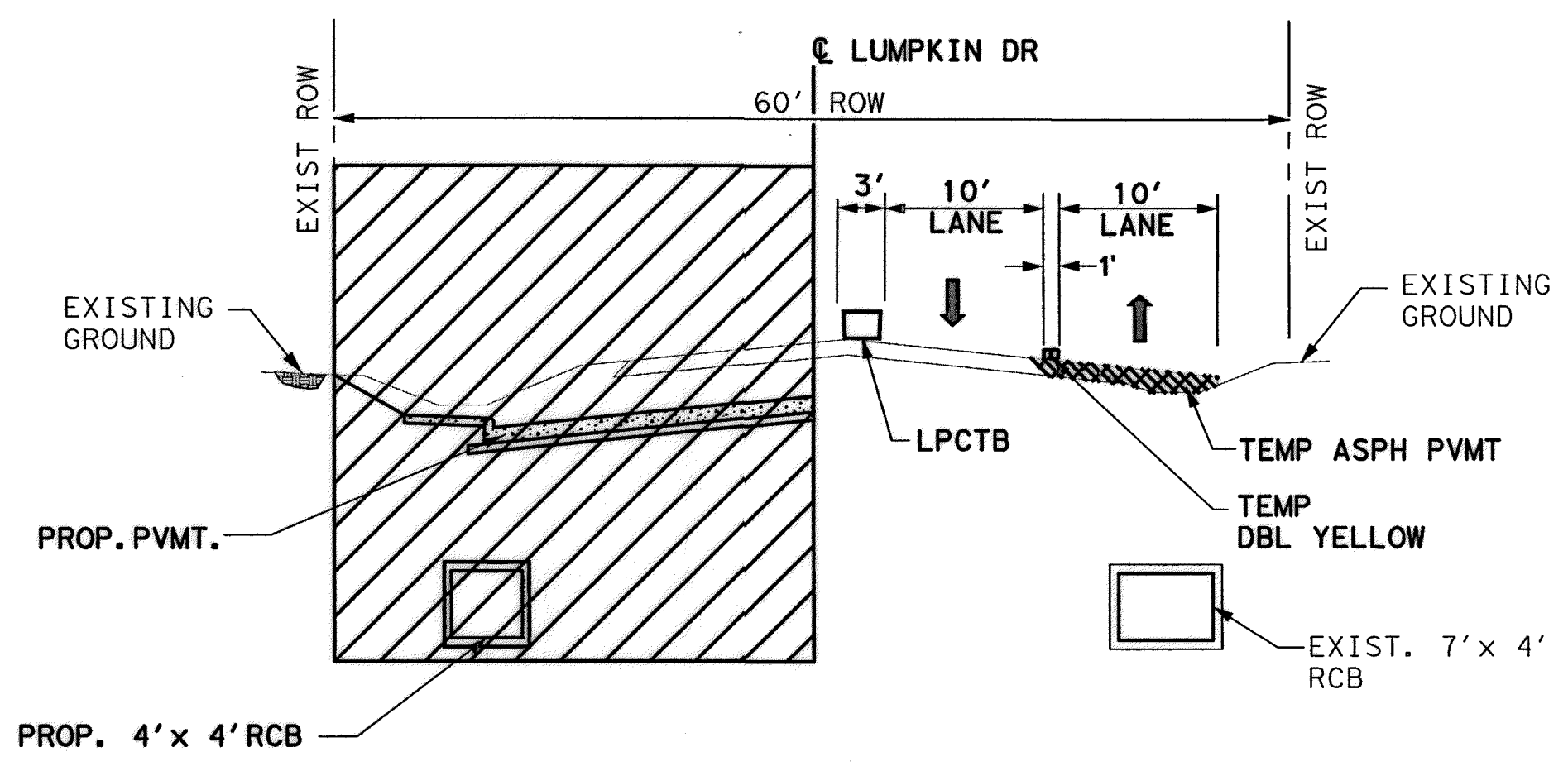
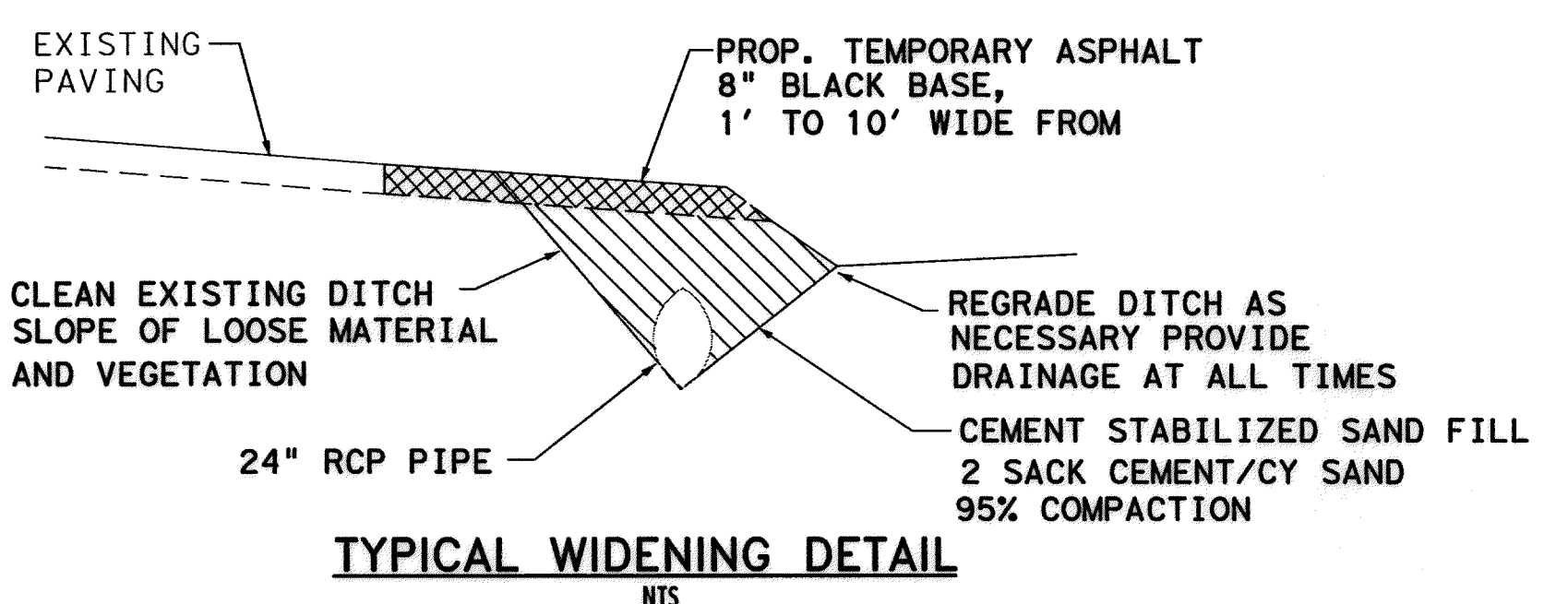
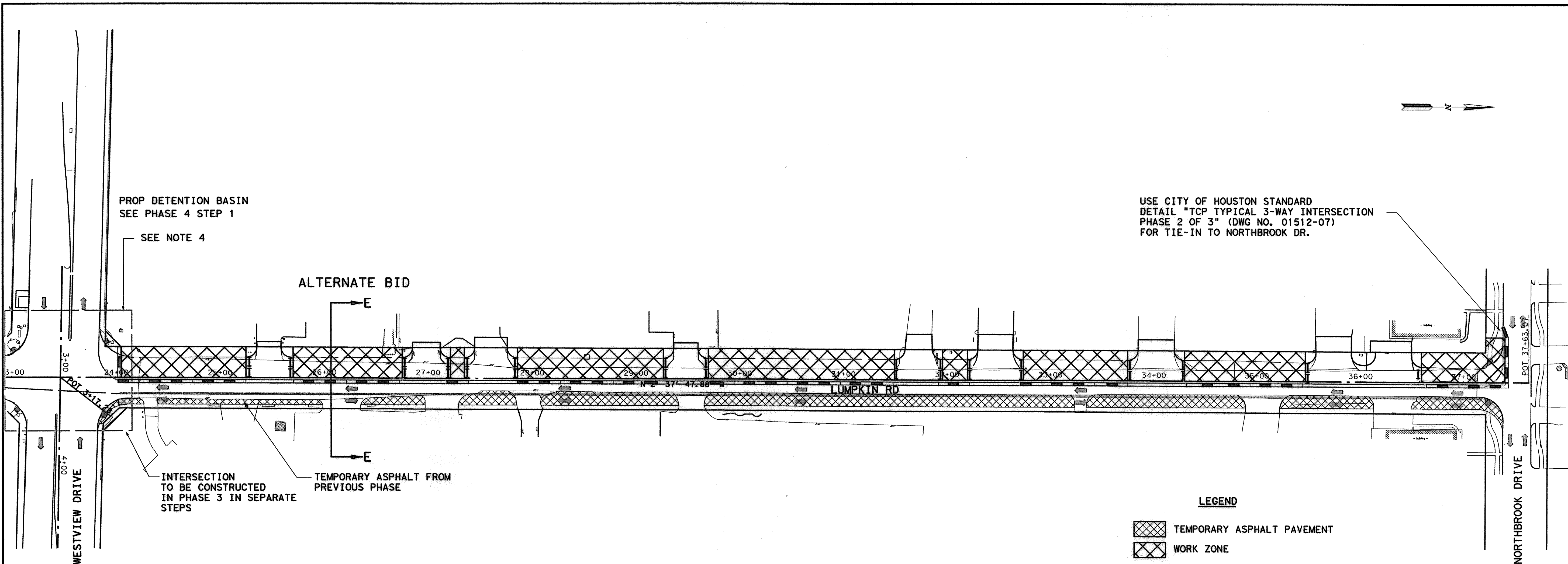
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SW

---

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: 1"=50'	
HORZ: 1"=50'	
SHEET: 127 OF 226	

No.	DATE	REVISIONS



- LEGEND**
- TEMPORARY ASPHALT PAVEMENT
  - WORK ZONE
  - TYPE III BARRICADE W/ ROAD CLOSED SIGN
  - FLASHING ARROW PANEL
  - DRUMS
  - EXISTING STRIPING
  - TEMP GROUND MOUNTED SIGNS
  - DIRECTION OF TRAFFIC
  - TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER

- NOTES:**
- TRANSITION SOUTHBOUND TRAFFIC THROUGH INTERSECTION ONTO NEW LUMPKIN ROAD, SOUTH OF WESTVIEW.
  - DO NOT CONSTRUCT PROPOSED CURB OR SIDEWALK (WEST SIDE) UNTIL AFTER PHASE 5.
  - PRIOR TO CONSTRUCTION ACROSS DRIVEWAY COORDINATE WITH PROPERTY OWNER TO PROVIDE ACCESS TO BUSINESS & RESIDENTS AT ALL TIMES.
  - REFER TO "TEMPORARY SIGNAL LAYOUT" FOR SIGNAL OPERATION DURING CONSTRUCTION.
  - INSTALL 5' (+/-) TEMP. ASPHALT ALONG WEST EDGE OF NEW CONCRETE.
  - HIGH EARLY STRENGTH CONCRETE SHALL BE USED ON ALL INTERSECTIONS & DRIVEWAYS.

9-15-2014

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2814

**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
TRAFFIC CONTROL PLAN  
PHASE 5 STEP 1  
(ALTERNATE BID) TCP-5S1

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

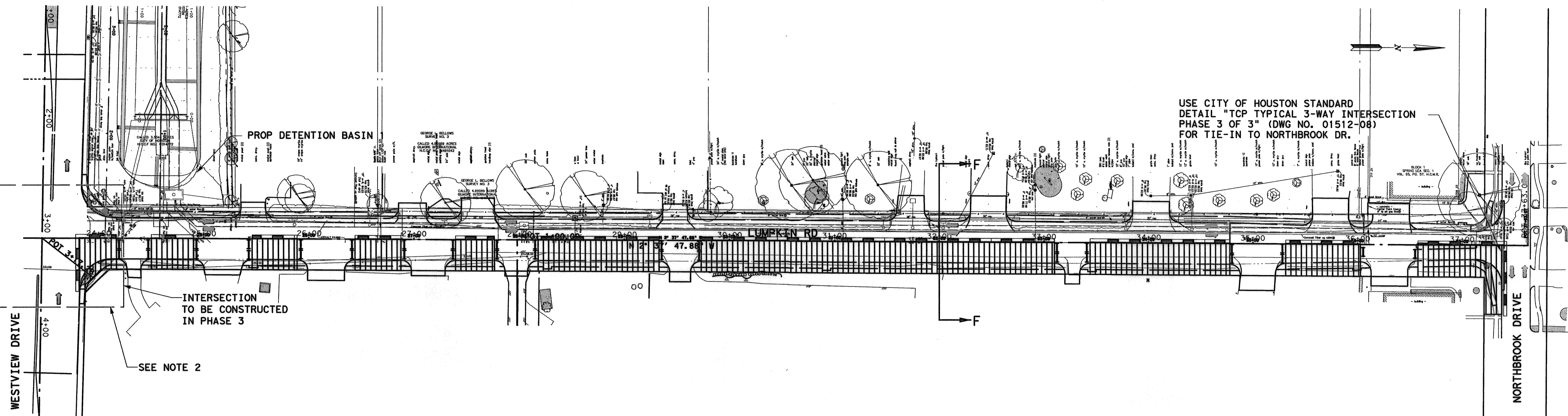
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
HORZ: 1"=50'		
SHEET:		
128 OF 226		

LUMPKIN SPEED LIMIT = 30 MPH

11:29:15 AM 9/4/2014 9/4/2014 TCP-Phase 5 Step 1.dgn MUGuthrie



No.	DATE	REVISIONS



USE CITY OF HOUSTON STANDARD  
 DETAIL "TCP TYPICAL 3-WAY INTERSECTION  
 PHASE 3 OF 3" (DWG NO. 01512-08)  
 FOR TIE-IN TO NORTHBROOK DR.

INTERSECTION  
 TO BE CONSTRUCTED  
 IN PHASE 3

SEE NOTE 2

WESTVIEW DRIVE

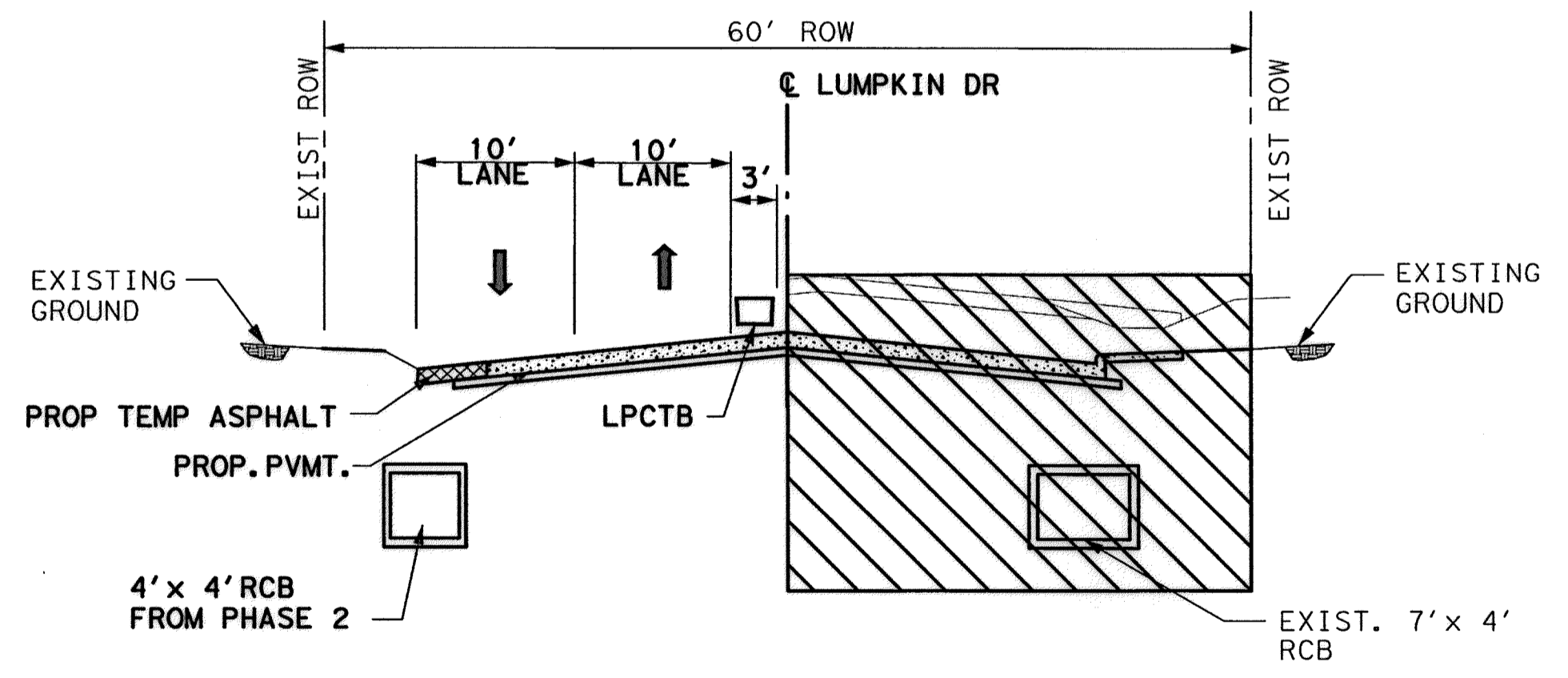
NORTHBROOK DRIVE

**LEGEND**

- TEMPORARY ASPHALT PAVEMENT
- WORK ZONE
- TYPE III BARRICADE  
W/ ROAD CLOSED SIGN
- FLASHING ARROW PANEL
- DRUMS
- EXISTING STRIPING
- TEMP GROUND MOUNTED SIGNS
- DIRECTION OF TRAFFIC
- TY I WITH TY II END TREATMENT  
LOW PROFILE CONC BARRIER

**NOTES:**

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY COORDINATE WITH PROPERTY OWNER TO PROVIDE ACCESS TO BUSINESS & RESIDENTS AT ALL TIMES.
2. REFER TO "TEMPORARY SIGNAL LAYOUT" FOR SIGNAL OPERATION DURING CONSTRUCTION.
3. HIGH EARLY STRENGTH CONCRETE SHALL BE USED ON ALL INTERSECTIONS & DRIVEWAYS.
4. ONCE PHASE 5 IS COMPLETE, USE CITY STANDARD ONE LANE CLOSURE FOR WEST SIDE CURB AND SIDEWALK CONSTRUCTION.



**TYPICAL TRAFFIC CONTROL SECTION  
 SECTION F-F  
 LUMPKIN ROAD  
 (STA. 24+30 TO STA. 37+50  
 (ALTERNATE BID)**

LUMPKIN SPEED LIMIT = 30 MPH

2-15-2014

Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY  
 REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews  
 & Newnam, Inc.**  
 A LEO A DALY COMPANY

**LUMPKIN ROAD  
 N-T17000-0012-3  
 TRAFFIC CONTROL PLAN  
 PHASE 5 STEP 2** TCP-5

**CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING**

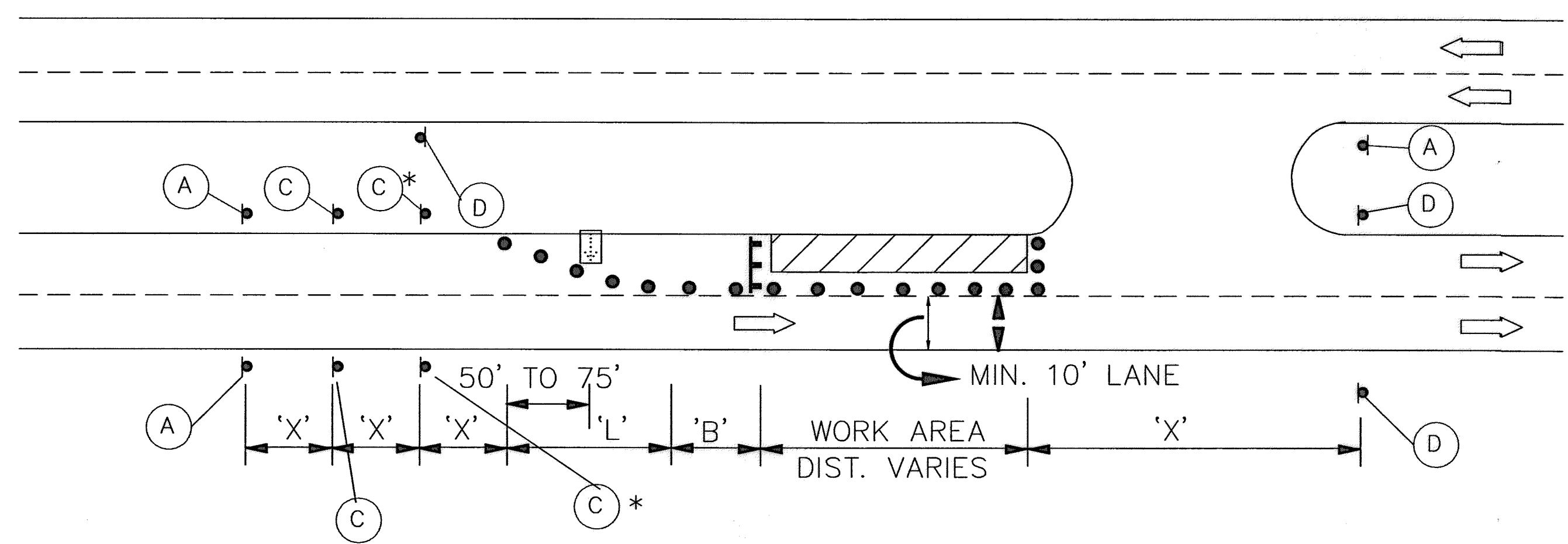
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWO

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
HORZ: 1"=50'	
SHEET:	
129 OF 226	

9/4/2014 11:29:37 AM MUGuthrie  
 p:\projects\se\Documents\Projects\139-10384-001\4-0-Production\TCP\117-001-TCP-Phase 5.dgn

APP.
REVISIONS
DATE
No.

MUGuthr-1 11:29:45 AM 9/4/2014



### TYPICAL LEFT LANE CLOSURE OF A MULTILANE STREET

#### SPECIAL TRAFFIC REQUIREMENTS

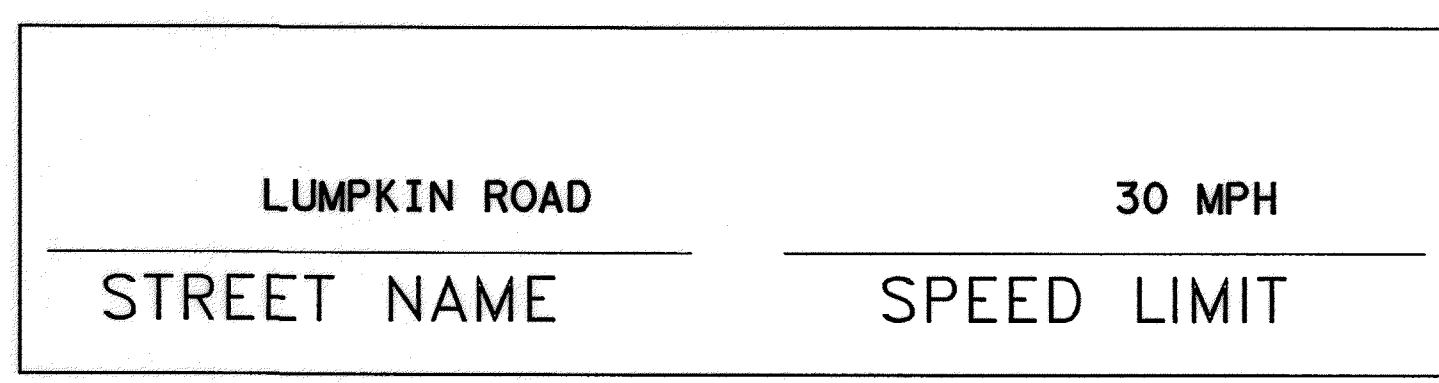
- Contractor shall provide and install traffic control devices in conformance with part VI of the Texas Manual on Uniform Traffic Control Devices (Texas MUTCD, most recent edition with revisions) during construction.
- Contractor will be responsible for replacing and maintaining pavement markings which include centerline, barrier lines, lane lines and raised pavement markings.
- This traffic control plan represents the minimum required by traffic conditions in the field. Contractor to maintain access to adjacent properties at all times.
- No lanes shall be closed from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. Monday thru Friday.
- No lanes shall be blocked between 7:00 a.m. to 6:00 p.m. Monday thru Friday in downtown area. Exception to these times, if necessary, should be sought during lane closure permit application.
- Contractor shall cover open pavement excavations with anchored steel plates during non-working hours, and open lanes for normal traffic flow.
- Off-duty Uniformed Police Officers are required to direct traffic when lanes are blocked.
- Lane closure time(s) shall be specified on the lane closure permit.
- If the contractor chooses to use a different method of "Traffic Control Plans" during the construction than what is outlined in the contract drawings, they shall be responsible to prepare and submit an alternate set of plans\* to Plan Review Section for approval ten working days prior to implementation.
  - \*These plans shall be drawn to scale on reproducible mylars and sealed by a Licensed Engineer in the State of Texas. Plans will become a part of the contract drawings.
- Approved copies of Traffic Control Plans and lane closure permits shall be available for inspection at job site at all times. Contractor must secure 'Lane Closure Permits' from City's Traffic Management and Maintenance Branch before closing a lane/sidewalk. The request must be made at least ten business days prior to the date for which the closure is sought. Note that working hours may be restricted or the request may be denied. Call 713-837-7280 for an application.
- Lanes shall be kept closed during pavement surface restoration and opened only after pavement is restored completely.

#### SPACING FOR CHANNELIZING DEVICES

- Plastic drums on merging taper @ 30' c-c with chevron sign @ 60' c-c and type 'C' warning light (for overnight closure)
  - Plastic drums on downstream taper @ 35' c-c
  - Plastic drums on radii @ 5' c-c
  - Plastic drums on tangent @ 35' c-c with vertical panel @ 70' c-c and type 'C' warning light @ 70' c-c (for overnight closure)
  - Plastic drums in front of construction zone @ 20' c-c with vertical panel @ 40' c-c and Type 'A' warning light @ 40' c-c (for overnight closure)
  - Concrete traffic barrier (CTB) or low profile concrete traffic barrier (lpcbt) with reflectors @ 10' c-c if pavement drop is more than twelve inches (12")
  - Tubular marker @ 20' C-C.
- Note: Spacing shown on traffic control plans shall supersede the above spacings.

Length for Longitudinal Buffer		LEGEND (TYPICAL)	TYPICAL SIGN SPACING AND TAPER LENGTHS.				
Posted Speed (mph)	Length in Feet (B)		Posted Speed (mph)	Sign Spacing "X"	Min. Desirable Taper Length "L"		
20	35	<ul style="list-style-type: none"> <li>PLASTIC DRUM (see spacing for channelizing devices)</li> <li>OFF-DUTY UNIFORMED POLICE OFFICER</li> <li>TYPE III BARRICADE</li> <li>FLASHING ARROW PANEL</li> <li>TUBULAR MARKER</li> </ul>	30	120'	150'	165'	180'
25	55		35	160'	205'	225'	245'
30	85		40	240'	265'	295'	320'
35	120		45	320'	450'	495'	540'
40	170		50	400'	500'	550'	600'
45	220		55	500'	550'	605'	660'
50	280						
55	335						

\* ENGINEER TO STRIKE THROUGH ALL SPEED LIMITS NOT APPLICABLE



CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

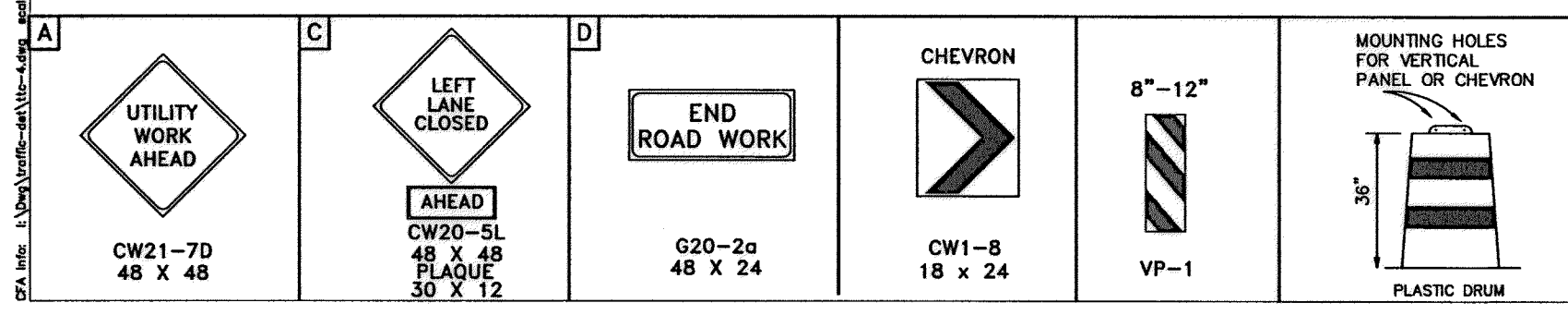
TYPICAL TRAFFIC CONTROL  
TYPICAL LEFT LANE CLOSURE  
OF A MULTILANE STREET

SCALE: PLAN 1"= 40' PROFILE VERT. 1"= 10' PROFILE HORZ. 1"= 40'

APPROVED BY: \_\_\_\_\_

CITY ENGINEER: \_\_\_\_\_ DIRECTOR OF PUBLIC WORKS AND ENGINEERING: \_\_\_\_\_

EFF DATE: DATE DWG NO: NUMBER



\* PLAQUE NOT REQUIRED

REVISION	REVISION DATE	DESCRIPTION	INITIAL

MEMORIAL CITY  
REDEVELOPMENT AUTHORITY

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3

TYPICAL TRAFFIC CONTROL  
TYPICAL LEFT LANE CLOSURE  
OF A MULTILANE STREET

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

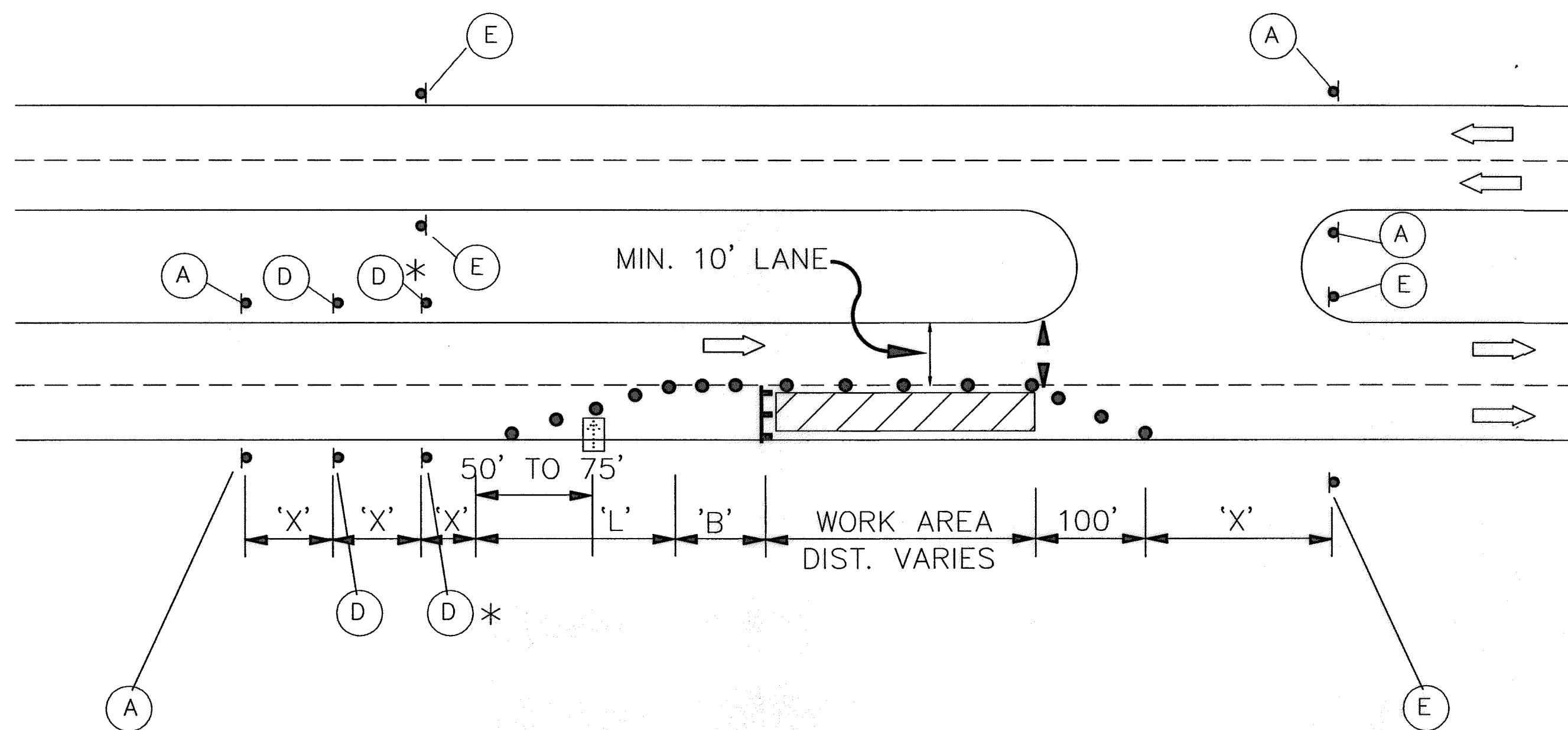
FILE NO.: \_\_\_\_\_ FACILITY: \_\_\_\_\_

DRAWING SCALE: \_\_\_\_\_ CITY DWG NO. \_\_\_\_\_

VERT: 1"=2'  
HORZ: 1"=20'

SHEET: 130 OF 226

AJ HAQUE DWG No2



**TYPICAL RIGHT LANE CLOSURE OF A MULTILANE STREET**

**SPECIAL TRAFFIC REQUIREMENTS**

- Contractor shall provide and install traffic control devices in conformance with part VI of the Texas Manual on Uniform Traffic Control Devices (Texas MUTCD, most recent edition with revisions) during construction.
- Contractor will be responsible for replacing and maintaining pavement markings which include centerline, barrier lines, lane lines and raised pavement markings.
- This traffic control plan represents the minimum required by traffic conditions in the field. Contractor to maintain access to adjacent properties at all times.
- No lanes shall be closed from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. Monday thru Friday.
- No lanes shall be blocked between 7:00 a.m. to 6:00 p.m. Monday thru Friday in downtown area. Exception to these times, if necessary, should be sought during lane closure permit application.
- Contractor shall cover open pavement excavations with anchored steel plates during non-working hours, and open lanes for normal traffic flow.
- Off-duty Uniformed Police Officers are required to direct traffic when lanes are blocked.
- Lane closure time(s) shall be specified on the lane closure permit.
- If the contractor chooses to use a different method of "Traffic Control Plans" during the construction than what is outlined in the contract drawings, they shall be responsible to prepare and submit an alternate set of plans\* to Plan Review Section for approval ten working days prior to implementation. \*These plans shall be drawn to scale on reproducible mylars and sealed by a Licensed Engineer in the State of Texas. Plans will become a part of the contract drawings.
- Approved copies of Traffic Control Plans and lane closure permits shall be available for inspection at job site at all times. Contractor must secure 'Lane Closure Permits' from City's Traffic Management and Maintenance Branch before closing a lane/sidewalk. The request must be made at least ten business days prior to the date for which the closure is sought. Note that working hours may be restricted or the request may be denied. Call 713-837-7280 for an application.
- Lanes shall be kept closed during pavement surface restoration and opened only after pavement is restored completely.

**SPACING FOR CHANNELIZING DEVICES**

- Plastic drums on merging taper @ 30' c-c with chevron sign @ 60' c-c and type 'C' warning light (for overnight closure)
  - Plastic drums on downstream taper @ 35' c-c
  - Plastic drums on radii @ 5' c-c
  - Plastic drums on tangent @ 35' c-c with vertical panel @ 70' c-c and type 'C' warning light @ 70' c-c (for overnight closure)
  - Plastic drums in front of construction zone @ 20' c-c with vertical panel @ 40' c-c and Type 'A' warning light @ 40' c-c (for overnight closure)
  - Concrete traffic barrier (CTB) or low profile concrete traffic barrier (lpctb) with reflectors @ 10' c-c if pavement drop is more than twelve inches (12")
  - Tubular marker @ 20' C-C.
- Note: Spacing shown on traffic control plans shall supersede the above spacings.

Length for Longitudinal Buffer		LEGEND (TYPICAL)	TYPICAL SIGN SPACING AND TAPER LENGTHS.				
Posted Speed (mph)	Length in Feet (B)		Posted Speed (mph)	Sign Spacing "X"	Min. Desirable Taper Length "L"		
20	35	<ul style="list-style-type: none"> <li>PLASTIC DRUM (see spacing for channelizing devices)</li> <li>OFF-DUTY UNIFORMED POLICE OFFICER</li> <li>TYPE III BARRICADE</li> <li>FLASHING ARROW PANEL</li> <li>TUBULAR MARKER</li> </ul>	30	120'	150'	165'	180'
25	55		35	160'	205'	225'	245'
30	85		40	240'	265'	295'	320'
35	120		45	320'	450'	495'	540'
40	170		50	400'	500'	550'	600'
45	220		55	500'	550'	605'	660'
50	280						
55	335						

\* ENGINEER TO STRIKE THROUGH ALL SPEED LIMITS NOT APPLICABLE

WESTVIEW DRIVE LUMPKIN ROAD	30 MPH 30 MPH
STREET NAME	SPEED LIMIT

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

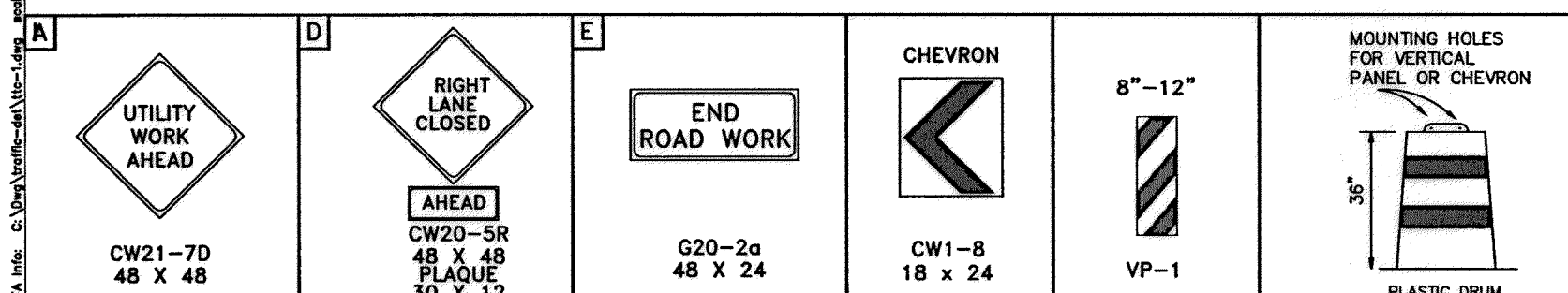
**TYPICAL TRAFFIC CONTROL  
TYPICAL RIGHT LANE CLOSURE  
OF A MULTILANE STREET**

SCALE: PLAN 1"=40' PROFILE VERT. 1"=20' PROFILE HORIZ. 1"=40'

APPROVED BY: \_\_\_\_\_

CITY ENGINEER DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: DATE DWG NO: NUMBER



\* PLAQUE NOT REQUIRED

REVISION	REVISION DATE	DESCRIPTION	INITIAL

9-15-2014

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

**LUMPKIN ROAD  
N-T17000-0012-3  
TYPICAL TRAFFIC CONTROL  
TYPICAL RIGHT LANE CLOSURE  
OF A MULTILANE STREET**

TCP-12

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

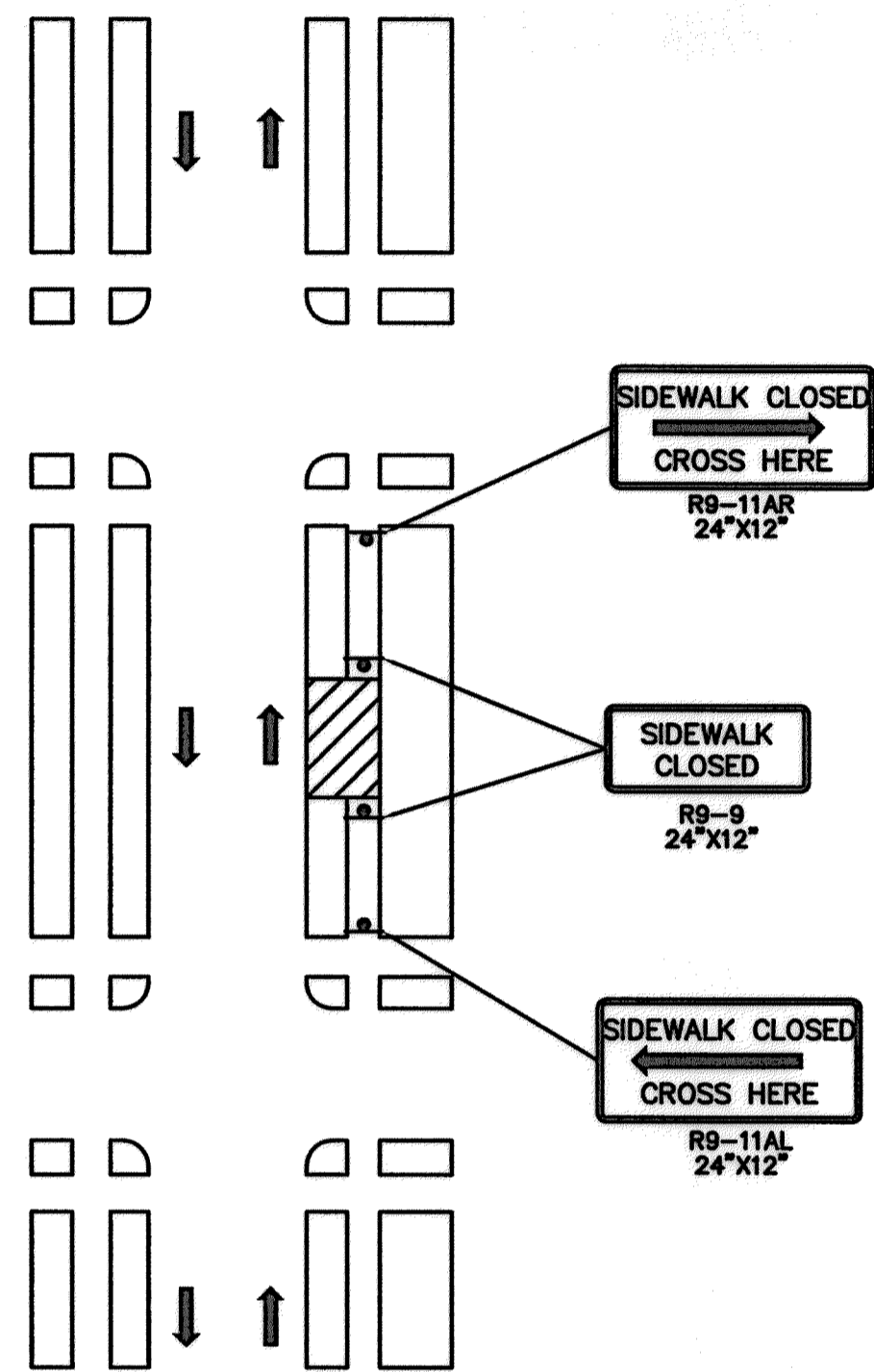
FILE NO.:

DRAWING SCALE:

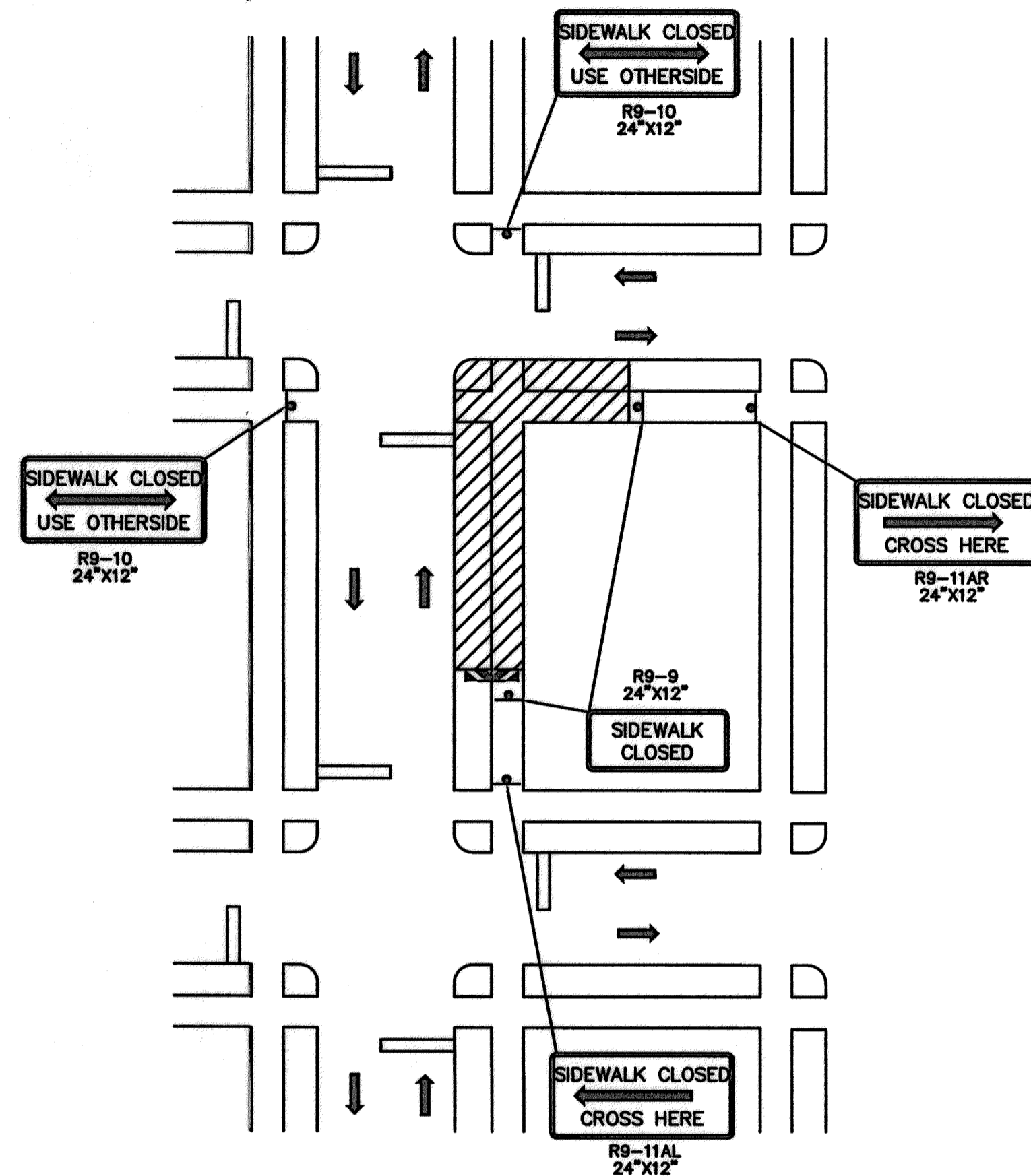
VERT: 1"=2'  
HORZ: 1"=20'

SHEET:  
131 OF 226

FACILITY:  
CITY DWG NO.



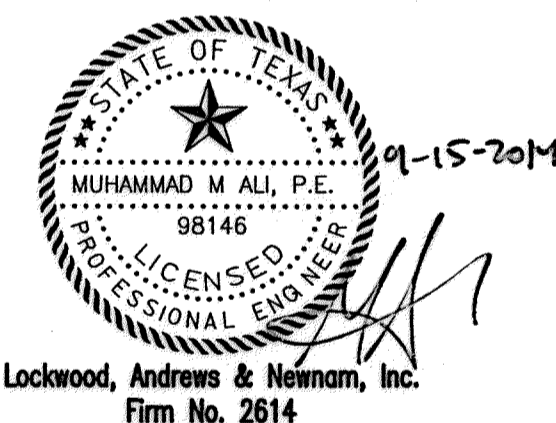
**SIDEWALK DETOUR**  
N. T. S.



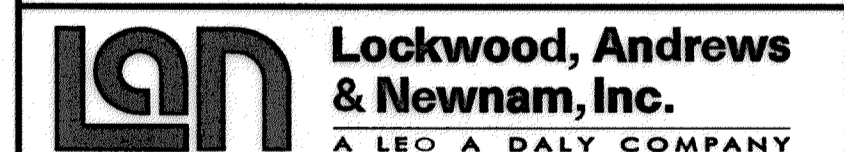
**CROSSWALK CLOSURES AND PEDESTRIAN DETOURS**  
N. T. S.

**LEGEND**

- CHANNELIZING DEVICE WITH CHEVRONS OR VERTICAL PANELS
- ➔ DIRECTIONAL ARROW
- ▨ WORK ZONE
- ⊥ TYPE III BARRICADE WITH TYPE "A" FLASHING WARNING LIGHTS.
- ⊥ TRAFFIC CONTROL SIGN
- ➔ FLASHING ARROW PANEL
- ▬ LOW PROFILE CONCRETE TRAFFIC BARRIER



MEMORIAL CITY  
REDEVELOPMENT AUTHORITY



LUMPKIN ROAD  
N-T17000-0012-3  
TRAFFIC CONTROL PLAN  
TYPICAL PEDESTRIAN DETAILS  
TCP-13

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
NOT TO SCALE	
SHEET:	
132 OF 226	

APP. REVISIONS DATE No. No. AUTH. 11-30-83 AM 9/4/2014 9/15/2014  
 M:\guthrie\paw\proj\project\use\Documents\Projects\130-10384-001\4-0-Product\en4-01-Drwings\TCP\120-001+TCP COH PED DETAIL.dgn



**EXISTING TRAFFIC SIGNAL PHASING**

WESTVIEW DRIVE		LUMPKIN ROAD	
Ø1	Ø2	Ø3	Ø4
Ø5	Ø6	Ø7	Ø8

← PEDESTRIAN PHASE  
 BARRIER "A" BARRIER "B"

**EXISTING SIGNAL HEAD SCHEDULE**

12" HORIZONTAL

C, J

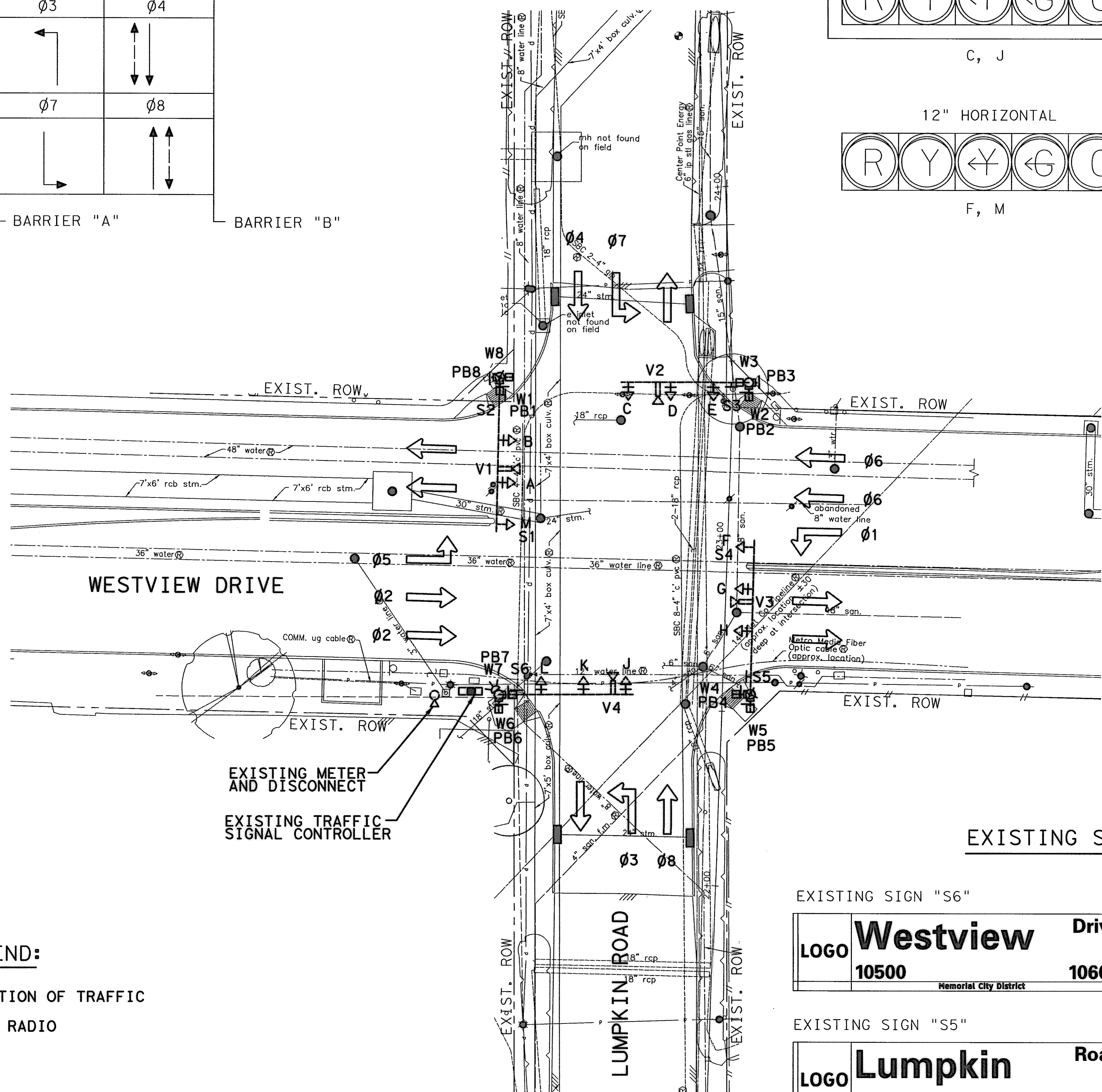
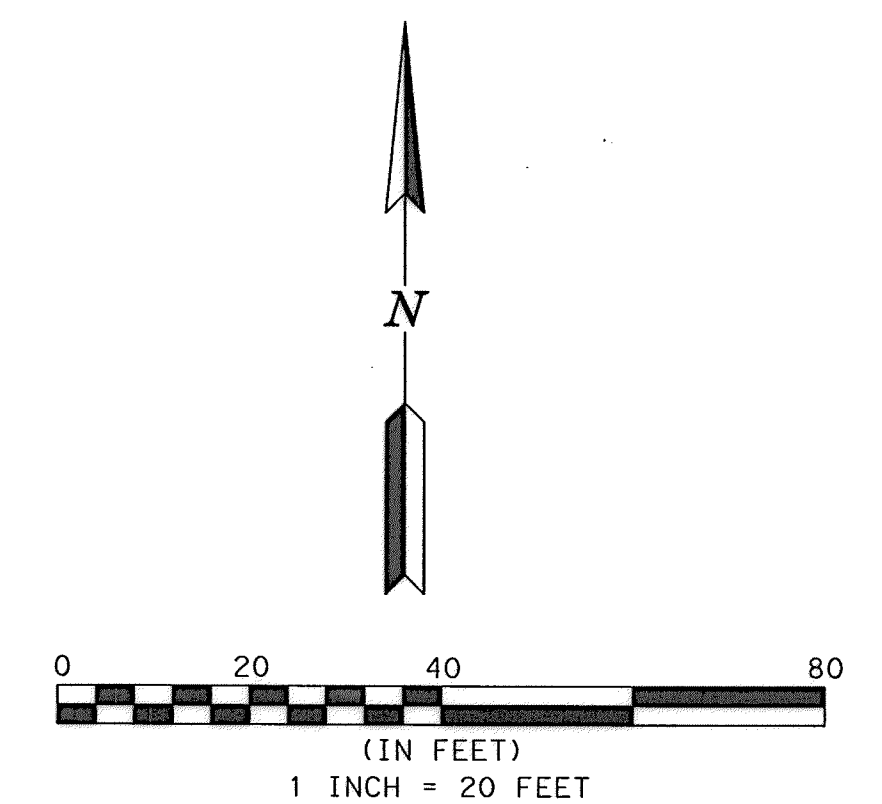
12" HORIZONTAL

A, B, D, E  
G, H, K, L

12" HORIZONTAL

F, M

W1 THROUGH W8



**LEGEND:**  
 DIRECTION OF TRAFFIC  
 WIMAX RADIO

**EXISTING STREET NAME SIGNS**

EXISTING SIGN "S6"

LOGO	<b>Westview</b>	Drive
	10500	10600
<small>Memorial City District</small>		

EXISTING SIGN "S2"

LOGO	<b>Lumpkin</b>	Road
	1100	1200
<small>Memorial City District</small>		

EXISTING SIGN "S5"

LOGO	<b>Lumpkin</b>	Road
	1200	1100
<small>Memorial City District</small>		

EXISTING SIGN "S3"

LOGO	<b>Westview</b>	Dr
	10600	10500
<small>Memorial City District</small>		

EXISTING SIGN "S1", "S4"

<b>LEFT TURN</b>	
<b>YIELD ON</b>	

9/12/14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3

EXISTING TRAFFIC SIGNAL LAYOUT AT WESTVIEW DRIVE

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
1" = 20'		
SHEET:		
134 OF 226		

APP. REVISIONS No. DATE No. DATE 11:11:30 AM 9/3/2014 11:11:30 AM 9/3/2014 P:\V\ladpw\_ladco\_int\proj\wise\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\Traffic\001-TS-EX

STOP LINE & LOOP PRE-FORMED DETECTOR LOCATIONS		
ITEM BY DIRECTION	STATION LUMPKIN ROAD	OFFSET LUMPKIN ROAD
<b>EASTBOUND</b>		
STOP LINE @ GUTTER	23+17.0	43.5' LT
STOP LINE @ MEDIAN	23+53.0	42.5' LT
1-PH 5 PRESENCE LOOP	23+48.0	CENTERED
6'x50' LEADING EDGE		IN LANE
2-PH 2 PRESENCE LOOP	23+37.0	CENTERED
6'x6' LEADING EDGE		IN LANE
3-PH 2 PRESENCE LOOP	23+26.0	CENTERED
6'x6' LEADING EDGE		IN LANE
4-PH 2 PRESENCE LOOP	23+44.7	CENTERED
6'x6' LEADING EDGE		IN LANE
5-PH 2 PRESENCE LOOP	23+33.7	CENTERED
6'x6' LEADING EDGE		IN LANE
<b>WESTBOUND</b>		
STOP LINE @ GUTTER	23+81.5	41.5' RT
STOP LINE @ MEDIAN	23+45.0	43.0' RT
1-PH 1 PRESENCE LOOP	23+50.0	CENTERED
6'x50' LEADING EDGE		IN LANE
2-PH 6 PRESENCE LOOP	23+61.0	CENTERED
6'x6' LEADING EDGE		IN LANE
3-PH 6 PRESENCE LOOP	23+72.0	CENTERED
6'x6' LEADING EDGE		IN LANE
4-PH 6 PRESENCE LOOP	23+52.9	CENTERED
6'x6' LEADING EDGE		IN LANE
5-PH 6 PRESENCE LOOP	23+63.9	CENTERED
6'x6' LEADING EDGE		IN LANE
<b>NORTHBOUND</b>		
STOP LINE @ GUTTER	22+93.0	19.5' RT
STOP LINE @ E STRIPE	22+93.0	8.0' LT
1-PH 3 PRESENCE LOOP	22+93.0	CENTERED
6'x50' LEADING EDGE		IN LANE
2-PH 8 PRESENCE LOOP	22+93.0	CENTERED
6'x6' LEADING EDGE		IN LANE
3-PH 8 PRESENCE LOOP	22+78.0	CENTERED
6'x6' LEADING EDGE		IN LANE
<b>SOUTHBOUND</b>		
STOP LINE @ GUTTER	24+06.5	19.0' LT
STOP LINE @ E STRIPE	24+06.5	2.5' RT
1-PH 7 PRESENCE LOOP	24+06.5	CENTERED
6'x50' LEADING EDGE		IN LANE
2-PH 4 PRESENCE LOOP	24+06.5	CENTERED
6'x6' LEADING EDGE		IN LANE
3-PH 4 PRESENCE LOOP	24+21.5	CENTERED
6'x6' LEADING EDGE		IN LANE

**OVERHEAD SIGNS**

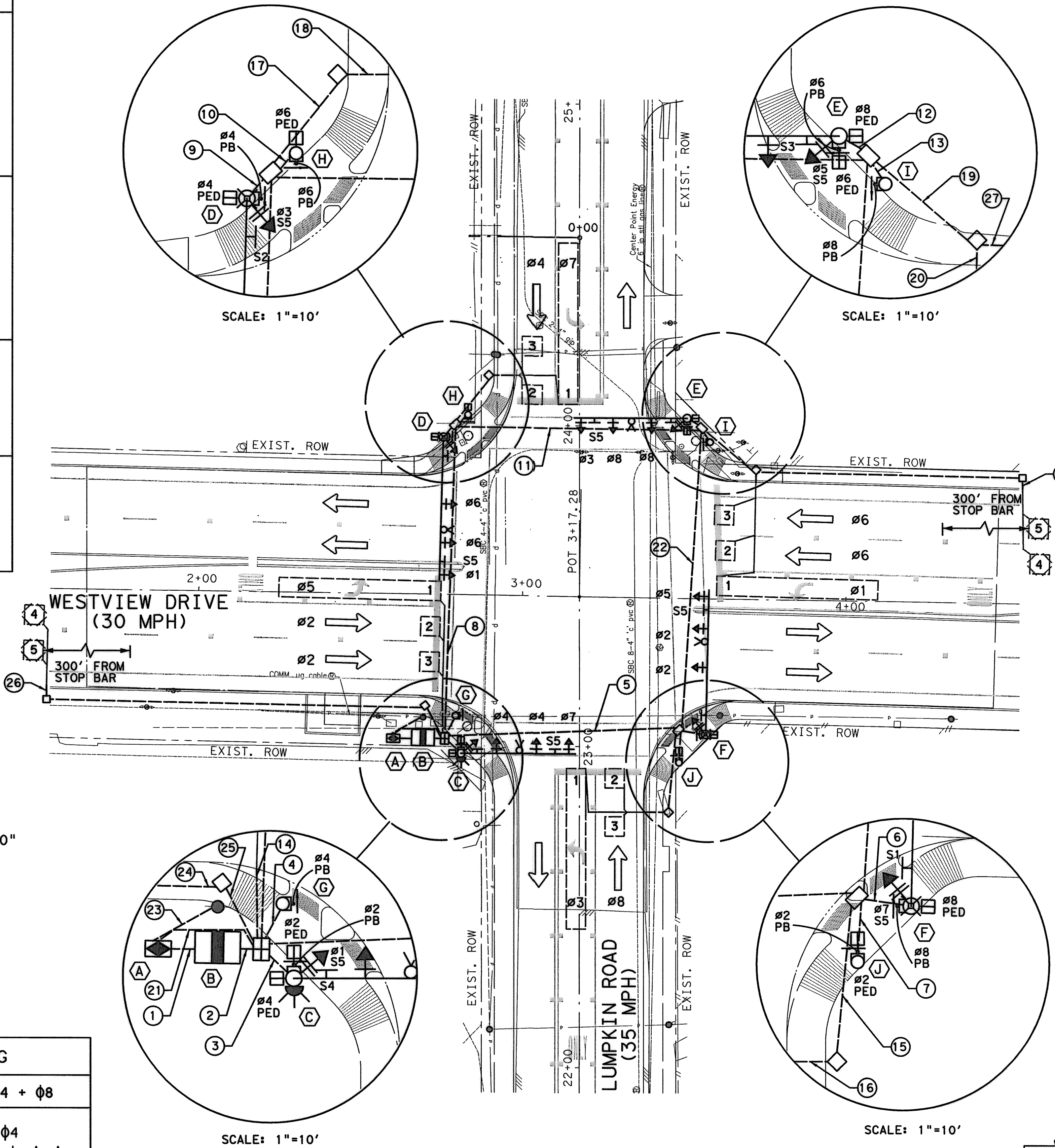
S1  
  
 S2  
  
 S3  
  
 S4  


S5: R10-17T  
 SIZE: 30" X 30"



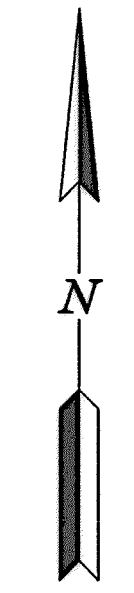
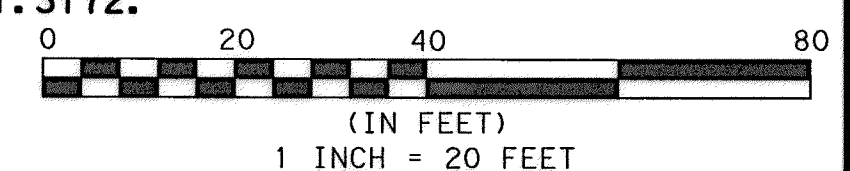
**NOTE:**  
 1. REFER TO SIGN DETAIL FOR OVERHEAD STREET NAME SIGNS.

PROPOSED TRAFFIC SIGNAL PHASING			
φ1 + φ5	φ2 + φ6	φ3 + φ7	φ4 + φ8



**NOTES:**

- POLE FOUNDATIONS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH 2009 COH TRAFFIC SIGNAL DETAIL 02893-05.
- MAST ARM POLE ASSEMBLIES SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH 2009 COH TRAFFIC SIGNAL DETAILS 02893-04A/04B.
- FOR SIDEWALK PLANS AND RAMP DETAILS SEE SHEET X FOR MORE INFORMATION.
- WESTVIEW DRIVE AND LUMPKIN ROAD IS CONNECTING TO TRANSTAR VIA WIMAX. CONTRACTOR IS RESPONSIBLE FOR WIMAX TO REMAIN OPERATIONAL AND ALL EQUIPMENT IF DAMAGED.
- THE CONTRACTOR SHALL MAINTAIN AND KEEP OPERATIONAL ALL INTELLIGENT TRANSPORTATION SYSTEMS (ITS) INFRASTRUCTURE DURING CONSTRUCTION. INFRASTRUCTURE INCLUDES, BUT NOT LIMITED TO, FIBER CABLE, COPPER, ETHERNET SWITCHES, WIMAX, BLUETOOTH, ETC. INTERRUPTION OF ITS OPERATIONS SHALL REQUIRE APPROVAL FROM THE CITY OF HOUSTON TRAFFIC OPERATIONS DIVISION/ITS SECTION AT A MINIMUM OF ONE WEEK IN ADVANCE. PLEASE CONTACT THE TRAFFIC OPERATIONS DIVISION/ITS SECTION FOR QUESTIONS AT 713.881.3172.



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

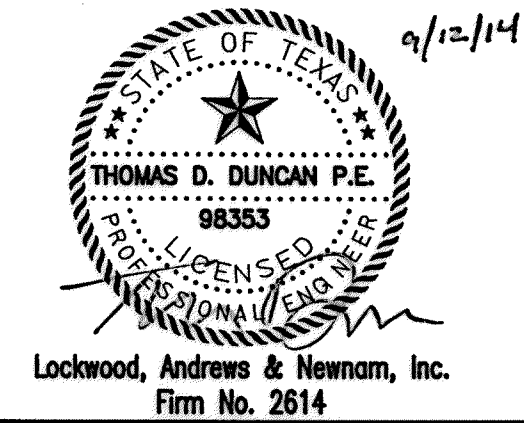
**NOTICE:**  
 FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS VERIFICATION DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.

PRIVATE UTILITY LINES SHOWN

AT&T UTILITY LINES SHOWN DATE 9/25/14  
 APPROVED FOR AT&T/SWBT UNDERGROUND CONDUIT FACILITIES ONLY. SIGNATURE VALID FOR ONE YEAR

CENTERPOINT ENERGY/NATURAL GAS DATE 10/7/14  
 FACILITIES VERIFICATION ONLY  
 (THIS SIGNATURE VERIFIES THAT YOU HAVE SHOWN CNP NATURAL GAS LINES CORRECTLY - NOT TO BE USED FOR CONFLICT VERIFICATION.) (GAS SERVICE LINES ARE NOT SHOWN.) SIGNATURE VALID FOR SIX MONTHS.

CENTERPOINT ENERGY/UNDERGROUND DATE 10/7/14  
 ELECTRICAL FACILITIES VERIFICATION ONLY  
 (THIS SIGNATURE VERIFIES EXISTING UNDERGROUND FACILITIES - NOT TO BE USED FOR CONFLICT VERIFICATION.) SIGNATURE VALID FOR SIX MONTHS.



MEMORIAL CITY REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newnam, Inc.  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 PROPOSED TRAFFIC SIGNAL LAYOUT AT WESTVIEW DRIVE  
 SHEET 1 OF 3

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
1" = 20'		
SHEET:	135 OF 226	

**LEGEND:**

- DIRECTION OF TRAFFIC
- WIMAX RADIO
- SAW CUT DETECTION ZONE
- PRE-FORMED DETECTION ZONE

9/23/2014 11:11:53 AM M:\guthrie\...  
 p:\v\edpw.ledco.intr.prj\proj\wise\Documents\Projects\130-10384-001\4-0-Product\on\4-01-Drawings\Traff.tcd\021-TS-PROP01

POLE SCHEDULE

POLE NUMBER	POLE TYPE	MAST ARM		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
		SIGNAL	LUMIN	MTG.	FACE					
	TYPE 1	35'	-	4 ASTROBRAC 2 PED	2H3 1H4LF 1V4LF 2CDP	-	POLARA NAVIGATOR R10-3E(L)	1 PRE-EMPT SENSOR 1 STREET NAME SIGN POLE C - 1 WIMAX RADIO 2 R10-17T "S5"	BY ENGINEER IN FIELD AT APPROX. POLE C - STA. 22+97.7 36.3' LT POLE E - STA. 24+02.4 33.5' RT LUMPKIN ROAD	02893-02 02893-03 02893-04A 02893-04B 02893-05 02893-09
	TYPE 2	45'	15'	4 ASTROBRAC 1 PED	2H3 1H4LF 1V4LF 1CDP	250 W HPS WITH PHOTOELECTRIC CELL ON POLE D	POLARA NAVIGATOR R10-3E(L)	1 PRE-EMPT SENSOR 1 STREET NAME SIGN 2 R10-17T "S5"	BY ENGINEER IN FIELD AT APPROX. POLE D - STA. 23+96.2 41.8' LT POLE F - STA. 23+03.8 39.3' RT LUMPKIN ROAD	02893-02 02893-03 02893-04A 02893-04B 02893-05 02893-09
	5'	-	-	-	-	-	POLARA NAVIGATOR R10-3E(R)	-	BY ENGINEER IN FIELD AT APPROX. POLE G - STA. 23+09.3 38.0' LT POLE I - STA. 23+94.9 40.6' RT LUMPKIN ROAD	02893-02 02893-03 02893-07
	15'	-	-	1 PED	1CDP	-	POLARA NAVIGATOR R10-3E(R)	-	BY ENGINEER IN FIELD AT APPROX. POLE H - STA. 24+03.3 34.2' LT LUMPKIN ROAD	02893-02 02893-03 02893-07
	15'	-	-	1 PED	1CDP	-	POLARA NAVIGATOR R10-3E(R)	-	BY ENGINEER IN FIELD AT APPROX. POLE J - STA. 22+95.1 31.0' RT LUMPKIN ROAD	02893-02 02893-03 02893-07

TRAFFIC SIGNAL CONTROLLER

CABINET	TYPE	CONTROLLER	AUX. CONTROL	REMARKS	LOCATION	STANDARDS
	UL TYPE 3R	METERED SERVICE PEDESTAL WITH TWO SINGLE POLE 30 AND 60 AMP CIRCUIT BREAKERS	-	-	BY ENGINEER IN FIELD AT APPROX. STA. 23+02.3 57.3' LT LUMPKIN ROAD	02893-14
	ITS 340	2070L WITH GPS SERIAL COMMUNICATION MODULE AND BATTERY BACKUP SYSTEM	THREE POLE STREET LIGHTING CONTACTOR	STANDARD SPECIFICATION 16730, 16731 16732, AND 16785	BY ENGINEER IN FIELD AT APPROX. STA. 23+02.5 48.1' LT LUMPKIN ROAD	02893-10C

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
PROPOSED TRAFFIC SIGNAL LAYOUT AT WESTVIEW DRIVE  
SHEET 2 OF 3

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

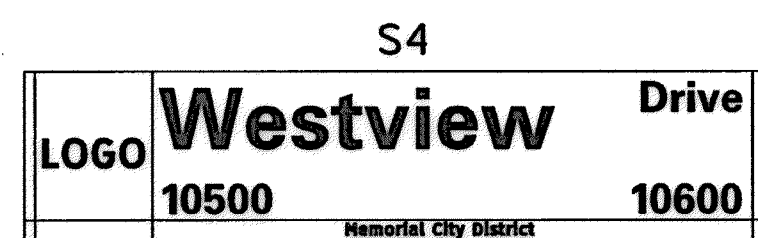
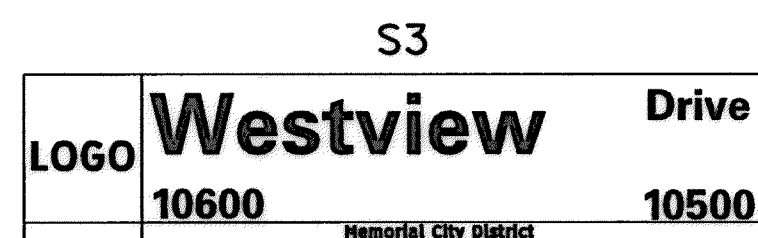
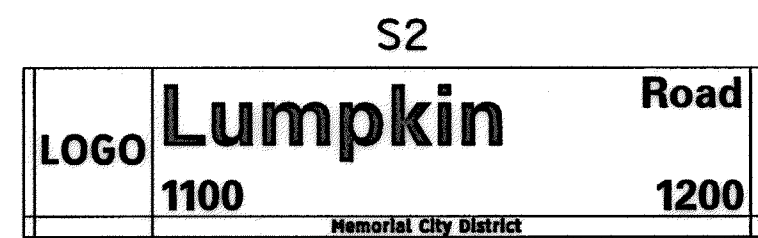
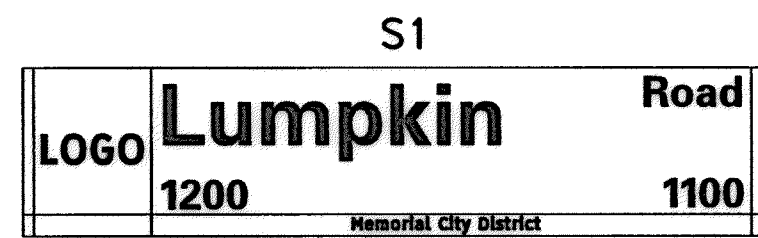
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG NO.
N. T. S.		
SHEET: 136 OF 226		

APP. REVISIONS No. DATE 9/3/2014 11:12:14 AM MUGurth-r1e pwt \\ ledpw. ledco. int projectwise\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\Traffic\c001-TS-PROP02





RELOCATED EXISTING STREET NAME SIGNS

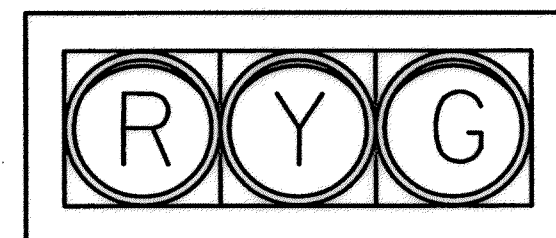


NOTE:

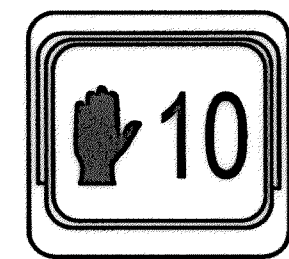
- RELOCATE EXISTING OVERHEAD STREET NAME SIGNS DURING CONSTRUCTION PHASE. REFER FOR COH TRAFFIC SIGNAL DETAIL NO. 02893-09 FOR SPAN WIRE HANGER DETAIL.

SIGNAL HEAD SCHEDULE

12" HORIZONTAL

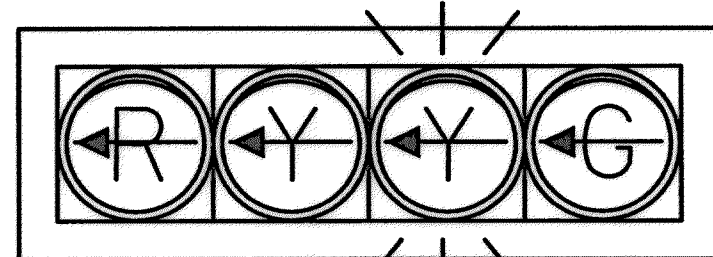


B, D, E, G, K, L, M, N



W1 THROUGH W8

12" HORIZONTAL



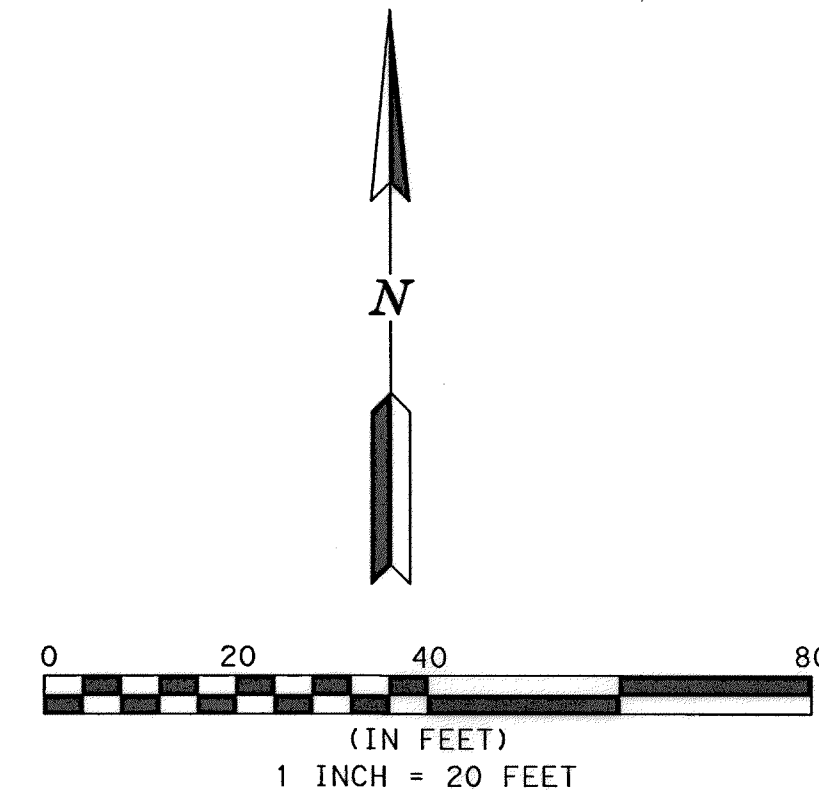
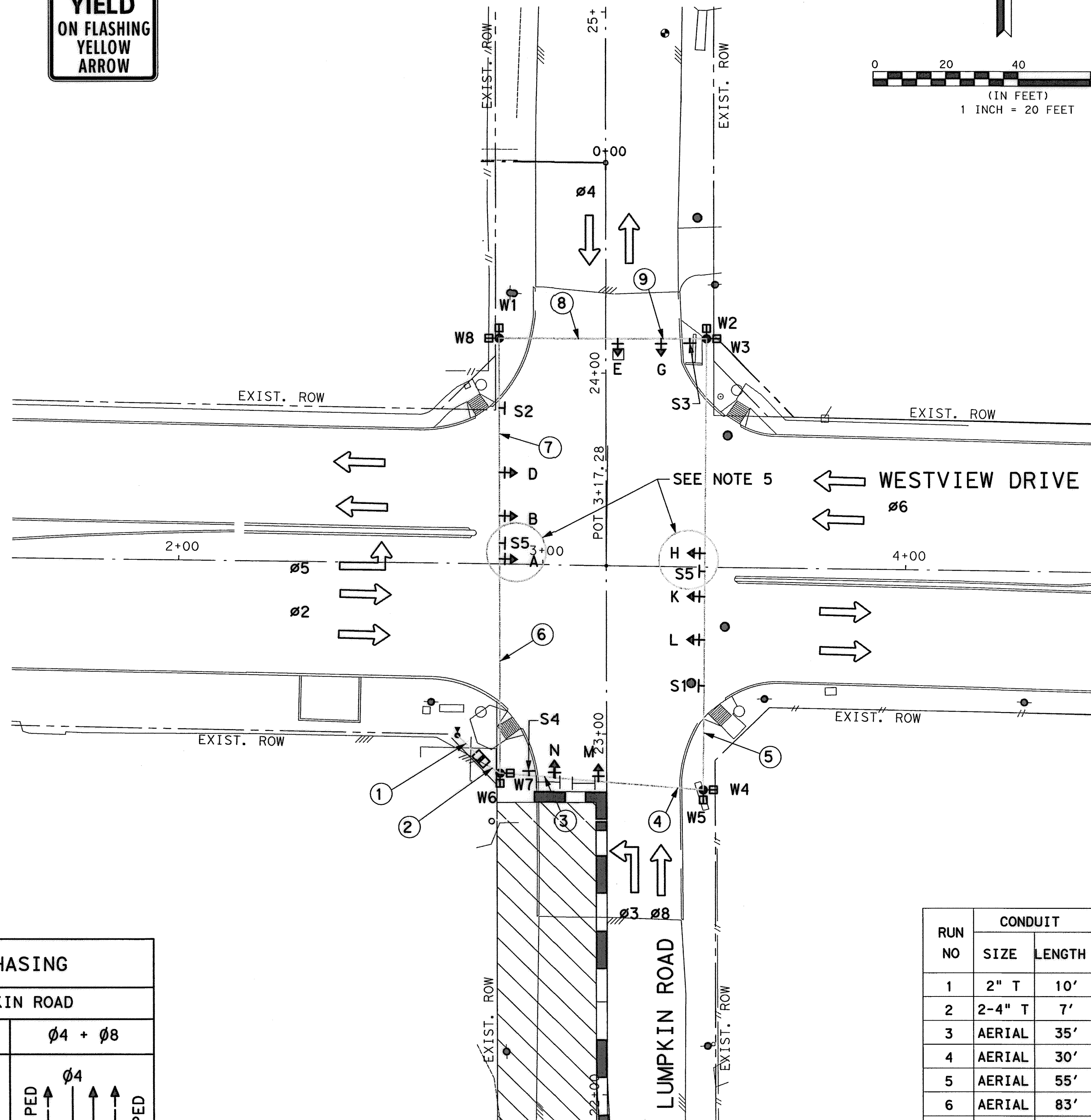
A, H

TEMPORARY TRAFFIC SIGNAL PHASING			
WESTVIEW DRIVE		LUMPKIN ROAD	
ø5	ø2 + ø6	ø3	ø4 + ø8
ø5	ø6 PED ø2 ø2 PED	ø3	ø4 PED ø4 ø8 ø8 PED

SHOWN FOR THIS PHASE ONLY

PROPOSED OVERHEAD SIGNS

S5: R10-17T  
 SIZE: 30" X 30"



LEGEND:

- DIRECTION OF TRAFFIC
- SPAN WIRE
- 40' WOOD POLE
- WORK ZONE
- TEMPORARY ASPHALT PAVEMENT
- TYPE III BARRICADE W/ ROAD CLOSED SIGN

NOTES:

- THE CONTRACTOR SHALL ADJUST THE SIGNALS AS NEEDED DURING THE CONSTRUCTION OF THIS INTERSECTION.
- COORDINATE WITH THE CITY OF HOUSTON TRAFFIC OPERATIONS BRANCH FOR APPROVED PHASING AND TIMING PLANS.
- THE TEMPORARY SIGNALS SHALL OPERATE AS FIXED TIME DURING CONSTRUCTION.
- SEE TRAFFIC CONTROL PLANS FOR ADDITIONAL INFORMATION.
- COVER LEFT TURN SIGNAL HEAD AND S5 USING BLACK PLASTIC OR APPROVED EQUAL WHEN REQUIRED DUE TO CLOSURE OF LEFT TURN BAY.

RUN NO	CONDUIT		TRAFFIC SIGNAL CABLE		
	SIZE	LENGTH	16C #14 AWG	1C #4 AWG	1C #8AWG (BARE)
1	2" T	10'		2	1
2	2-4" T	7'	6		2
3	AERIAL	35'	3		
4	AERIAL	30'	2		
5	AERIAL	55'	2		
6	AERIAL	83'	3		
7	AERIAL	36'	2		
8	AERIAL	40'	1		
9	AERIAL	20'	1		

T = TRENCH

9/12/14  
 Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newnam, Inc.  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 TEMPORARY TRAFFIC SIGNAL LAYOUT AT WESTVIEW DRIVE

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

FILE NO.:

DRAWING SCALE:  
 1" = 20'

SHEET:  
 138 OF 226

FACILITY:  
 CITY DWG NO.

9/3/2014 5:09:00 PM M:\Guthrie\1

# SUMMARY OF SIGNS

PLAN SHEET NO	SIGN NO	SIGN NOMENCLATURE	SIGN TEXT	DIMENSION (INCHES)	SIGNAL MOUNT	ROUND POST (PERMISSION NEEDED FROM CITY TRAFFIC ENGINEER)	NUMBER OF POSTS (1 OR 2)	SIGN AREA SQ. FT. (FOR INFORMATION ONLY NOT INTENDED FOR BID)	SIGN POST SIZE (TABLE A)
1 OF 3	1	D3-1	KATY FRWY ROAD / 10500	48X9	X		1	3	
		D3-1	LUMPKIN ROAD / 1000	48X9				3	
		R1-1	STOP	36X36				9	
		R6-2R	ONE WAY WITH RIGHT ARROW	24X30				5	
	2	R3-5R	RIGHT ONLY	30X36	X			1	7.5
	3	R3-9oP	BEGIN	24X8	X			1	1.3
		R3-9B	TWO-WAY LEFT TURN LANE	24X36				6	
	4	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5
		R7-201A	TOW-AWAY ZONE	12X6				1	0.5
	5	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5
		R7-201A	TOW-AWAY ZONE	12X6				1	0.5
	6	R3-9dP	END	24X8	X			1	1.3
		R3-9B	TWO-WAY LEFT TURN LANE	24X36				6	
	7	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5
		R7-201A	TOW-AWAY ZONE	12X6				1	0.5
	8	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5
		R7-201A	TOW-AWAY ZONE	12X6				1	0.5
	9	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5
		R7-201A	TOW-AWAY ZONE	12X6				1	0.5
	10	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5
		R7-201A	TOW-AWAY ZONE	12X6				1	0.5
	11	R3-9B	TWO-WAY LEFT TURN LANE	24X36	X			1	6
	12	R3-9B	TWO-WAY LEFT TURN LANE	24X36	X			1	6
	13	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5
		R7-201A	TOW-AWAY ZONE	12X6				1	0.5
	14	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5
		R7-201A	TOW-AWAY ZONE	12X6				1	0.5
	15	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5
		R7-201A	TOW-AWAY ZONE	12X6				1	0.5
	16	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5
	R7-201A	TOW-AWAY ZONE	12X6				1	0.5	
17	R3-9B	TWO-WAY LEFT TURN LANE	24X36	X			1	6	
18	R3-9B	TWO-WAY LEFT TURN LANE	24X36	X			1	6	
19	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
	R7-201A	TOW-AWAY ZONE	12X6				1	0.5	
20	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
	R7-201A	TOW-AWAY ZONE	12X6				1	0.5	
21	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
	R7-201A	TOW-AWAY ZONE	12X6				1	0.5	
22	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
	R7-201A	TOW-AWAY ZONE	12X6				1	0.5	
23	R3-9B	TWO-WAY LEFT TURN LANE	24X36	X			1	6	
24	R3-9B	TWO-WAY LEFT TURN LANE	24X36	X			1	6	
25	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
	R7-201A	TOW-AWAY ZONE	12X6				1	0.5	
26	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
	R7-201A	TOW-AWAY ZONE	12X6				1	0.5	
27	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
	R7-201A	TOW-AWAY ZONE	12X6				1	0.5	
28	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
	R7-201A	TOW-AWAY ZONE	12X6				1	0.5	
29	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
	R7-201A	TOW-AWAY ZONE	12X6				1	0.5	
30	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
	R7-201A	TOW-AWAY ZONE	12X6				1	0.5	
2 OF 3	31	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X		1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6			1	0.5	
	32	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X		1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6			1	0.5	
	33	R3-9B	TWO-WAY LEFT TURN LANE	24X36	X		1	6	
	34	R3-9B	TWO-WAY LEFT TURN LANE	24X36	X		1	6	
	35	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X		1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6			1	0.5	
	36	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X		1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6			1	0.5	
	37	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X		1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6			1	0.5	
	38	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X		1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6			1	0.5	
	39	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X		1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6			1	0.5	
	40	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X		1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6			1	0.5	
	41	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X		1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6			1	0.5	

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3

SUMMARY OF SIGNS

SHEET 1 OF 2

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
SHEET:	139 OF 226	

# SUMMARY OF SIGNS

PLAN SHEET NO	SIGN NO	SIGN NOMENCLATURE	SIGN TEXT	DIMENSION (INCHES)	SQUARE POST	SIGNAL MOUNT	ROUND POST (PERMISSION NEEDED FROM CITY TRAFFIC ENGINEER)	NUMBER OF POSTS (1 OR 2)	SIGN AREA SQ. FT. (FOR INFORMATION ONLY NOT INTENDED FOR BID)	SIGN POST SIZE (TABLE A)
3 OF 3	42	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	43	R3-9B	TWO-WAY LEFT TURN LANE	24X36	X			1	6	
	44	R3-9B	TWO-WAY LEFT TURN LANE	24X36	X			1	6	
	45	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	46	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	47	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	48	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	49	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	50	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	51	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	52	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	53	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	54	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	55	R3-9B	TWO-WAY LEFT TURN LANE	24X36	X			1	6	
	56	R3-9B	TWO-WAY LEFT TURN LANE	24X36	X			1	6	
	57	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	58	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	59	R5-2	NO TRUCKS (SYMBOL)	24X24	X			1	4	
	60	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	61	R7-2A (MOD)	NO PARKING WITH DOUBLE ARROW	12X18	X			1	1.5	
		R7-201A	TOW-AWAY ZONE	12X6					0.5	
	62	R5-2	NO TRUCKS (SYMBOL)	24X24	X			1	4	
SITE 1	63	R1-1	STOP	30X30	X			1	6.3	
SITE 3	64	R1-1	STOP	30X30	X			1	6.3	

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**  
  
**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY  
 LUMPKIN ROAD  
 N-T17000-0012-3  
 SUMMARY OF SIGNS  
 SHEET 2 OF 2  
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

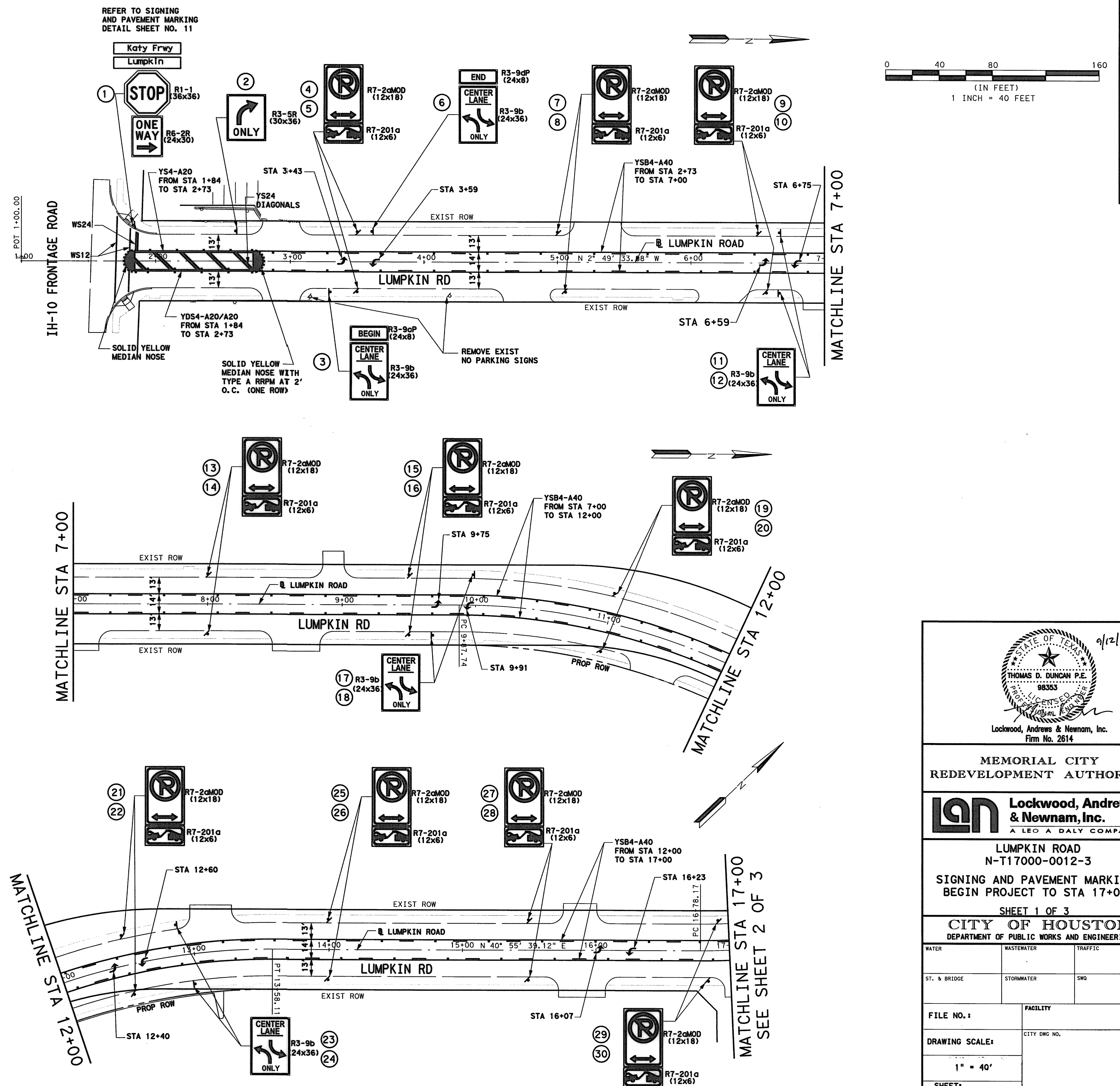
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG NO.
SHEET:		
140 OF 226		

REFERENCE SPEC. NO.	DESCRIPTION	UNIT	QTY
02764	RRPM, Type II-A-A "A"	EA	93
02767	TPM (12-Inch, Solid, White "WS12")	LF	112
02767	TPM (24-Inch, Solid, White "WS24")	LF	13
02767	TPM (4-Inch, Solid, Yellow "YS4")	LF	90
02767	TPM (4-Inch, Solid & Broken, Yellow "YSB4")	LF	2854
02767	TPM (4-Inch, Double Solid, Yellow "YDS4")	LF	180
02767	TPM (24-Inch, Solid, Yellow "YS24")	LF	60
02767	TPM (Arrow)	EA	10
02767	TPM (Solid Yellow Median Nose)	EA	2
01554	Placement of Permanent Signs	EA	30

RRPM = RAISED REFLECTIVE PAVEMENT MARKERS  
 TPM = THERMOPLASTIC PAVEMENT MARKINGS

**GENERAL PAVEMENT MARKING NOTES:**

- PRIOR TO START OF CONSTRUCTION, ALL EXISTING PAVEMENT MARKINGS WITHIN THE AREA OF CONSTRUCTION SHALL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE CITY INSPECTOR AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING ALL EXISTING PAVEMENT MARKINGS AND LANE CONFIGURATIONS WILL BE DUPLICATED AGAIN. THIS REVIEW CAN BE DONE IN CONJUNCTION WITH SIGN INVENTORY. THE CONTRACTOR IS HELD ACCOUNTABLE FOR EXISTING AND TEMPORARY CONSTRUCTION PAVEMENT MARKINGS THROUGHOUT THE PROJECT AND AT THE PROJECT COMPLETION.
- ALL PAVEMENT MARKINGS SHALL CONFORM TO CITY OF HOUSTON STANDARDS AND SPECIFICATIONS AND GENERAL GUIDELINES OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
- THE PERMANENT PAVEMENT MARKINGS MAY BE MODIFIED AS DIRECTED BY THE CITY TRAFFIC ENGINEER.
- THE DESIGN SPEED FOR THE ROAD IS: 35 MPH. THE POSTED SPEED LIMIT IS: 30 MPH.
- ALL LANE DIMENSIONS ARE FROM CENTER OF LANE LINE, CENTER OF DOUBLE LANE LINE, FACE OF CURB, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
- THE PAVEMENT MARKING DRAWINGS ARE SCHEMATIC ONLY. THE CONTRACTOR SHALL FOLLOW ALL DIMENSIONS, DETAILS AND STANDARDS WHEN INSTALLING PAVEMENT MARKINGS AND SYMBOLS.
- THE FINAL LONGITUDINAL STRIPING SHALL BE 60 MIL (0.060") THICK HOT-SPRAYED THERMOPLASTIC PLACED OVER THE TEMPORARY STRIPING WITHIN 14 TO 30 CALENDAR DAYS AFTER COMPLETION OF THE FINAL PAVEMENT SURFACE, OR AS DIRECTED BY THE CITY TRAFFIC ENGINEER. ALL OTHER PAVEMENT MARKINGS SHALL BE APPLIED AT THE SAME TIME. TEMPORARY STRIPING SHALL BE WATER BASED PAINT.
- ALL FINAL TRANSVERSE MARKINGS SHALL BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. ALL PAVEMENT ARROWS AND LEGENDS SHALL ALSO BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. PREFORMED THERMOPLASTIC APPLICATIONS MAY BE USED IF ONLY APPROVED BY THE CITY TRAFFIC ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT AND INSTALLATION OF PAVEMENT MARKINGS OF FINAL SURFACE COURSE FOLLOWING CONTROL POINTS THAT HAVE BEEN SET NO MORE THAN 50 FEET APART ALONG THE LINES TO BE IMPLEMENTED. IN TANGENT SECTIONS OF A ROAD WHERE THE PAVEMENT MARKING PATTERN DOES NOT CHANGE, CONTROL POINTS CAN BE SET AT 200 FEET SPACING. THE LAYOUT AND INSPECTION OF ALL PAVEMENT MARKINGS SHALL BE APPROVED BY THE CITY HOUSTON REPRESENTATIVE PRIOR TO THE APPLICATION OF MATERIALS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE FINAL SURFACE COURSE IS PLACED SO THAT THE STRIPING IS OFFSET NO MORE THAN ONE FOOT CLEAR OF THE CONSTRUCTION JOINT, UNLESS OTHERWISE DIRECTED BY THE CITY TRAFFIC ENGINEER.
- ALL RAISED PAVEMENT MARKERS (RPMS) SHALL BE INSTALLED SO THAT THE REFLECTIVE FACE OF EACH MARKER IS FACING THE DIRECTION OF TRAFFIC AND IS PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW. TYPE C PAVEMENT MARKERS SHALL BE INSTALLED SO THAT THE CLEAR FACE OF EACH MARKER IS FACING THE APPROACHING TRAFFIC FLOW AND PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW.
- ALL REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED IN ACCORDANCE TO THE CITY OF HOUSTON STANDARD SPECIFICATION 02762. APPLYING OVER EXISTING PAVEMENT MARKINGS DOES NOT CONSTITUTE AS APPROVED OBLITERATION METHOD.
- THE ENGINEER OF RECORD SHALL BE REQUIRED TO PRODUCE AS-BUILT OF PAVEMENT MARKINGS PLANS WITHIN 30 DAYS AFTER COMPLETION OF PAVEMENT MARKING IMPLEMENTATION.
- BLUE RPMS MAY BE PLACED ADJACENT TO FIRE HYDRANTS WITH THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
- FOR ALL CONSTRUCTION, ALL PAVEMENT MARKINGS AND SIGNING SHALL BE INSTALLED AND SHALL BE PAID BY THE PROJECT OWNER/DEVELOPER.
- FINAL INSPECTION AND ACCEPTANCE OF PAVEMENT MARKINGS SHALL BE PERFORMED BY TRAFFIC OPERATIONS DIVISION REPRESENTATIVE (713-803-3054).



9/12/14

STATE OF TEXAS  
 THOMAS D. DUNCAN P.E.  
 98363  
 LICENSED PROFESSIONAL ENGINEER

Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newnam, Inc.  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 SIGNING AND PAVEMENT MARKING  
 BEGIN PROJECT TO STA 17+00

SHEET 1 OF 3  
 CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG NO.
1" = 40'		
SHEET:		
141 OF 226		

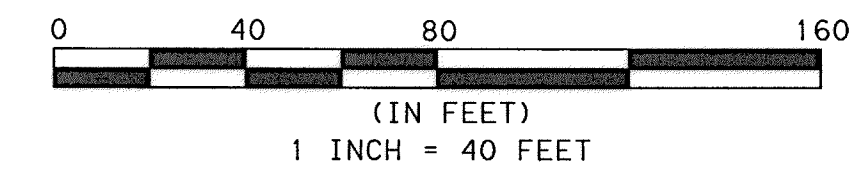
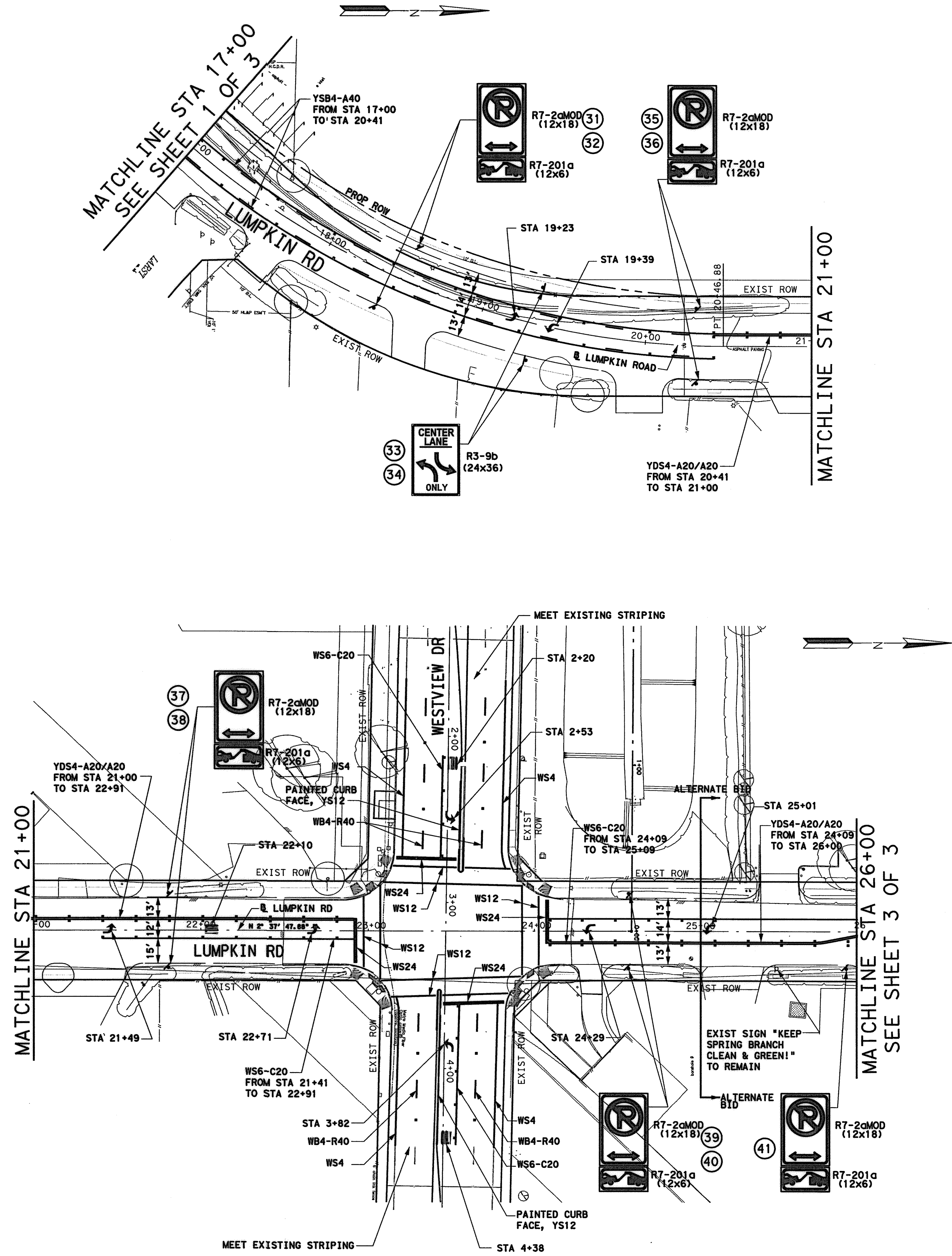
12/31/53 PM 9/12/2014  
 M:\edpw\l adcoo\1ntr\projectwise\Documents\Projects\130-10384-001\4-0-Product\on\4-01-Drawings\Sign-Pavement-Mark\130-10384-001-PM-01.dgn

REFERENCE SPEC. NO.	DESCRIPTION	UNIT	QTY
02764	RRPM, Type I-C "C"	EA	23
02764	RRPM, Type II-C-R "R"	EA	8
02764	RRPM, Type II-A-A "A"	EA	59
02767	TPM (4-Inch, Double Solid, Yellow "YDS4")	LF	538
02767	TPM (4-Inch, Solid & Broken, Yellow "YSB4")	LF	682
02767	TPM (12-Inch, Solid, Yellow "YS12")	LF	209
02767	TPM (4-Inch, Solid, White "WS4")	LF	353
02767	TPM (4-Inch, Broken, White "WB4")	LF	320
02767	TPM (6-Inch, Solid, White "WS6")	LF	250
02767	TPM (12-Inch, Solid, White "WS12")	LF	530
02767	TPM (24-Inch, Solid, White "WS24")	LF	133
02767	TPM (Word)	EA	3
02767	TPM (Arrow)	EA	8
01554	Placement of Permanent Signs	EA	11

RRPM = RAISED REFLECTIVE PAVEMENT MARKERS  
 TPM = THERMOPLASTIC PAVEMENT MARKINGS

**GENERAL PAVEMENT MARKING NOTES:**

- PRIOR TO START OF CONSTRUCTION. ALL EXISTING PAVEMENT MARKINGS WITHIN THE AREA OF CONSTRUCTION SHALL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE CITY INSPECTOR AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING ALL EXISTING PAVEMENT MARKINGS AND LANE CONFIGURATIONS WILL BE DUPLICATED AGAIN. THIS REVIEW CAN BE DONE IN CONJUNCTION WITH SIGN INVENTORY. THE CONTRACTOR IS HELD ACCOUNTABLE FOR EXISTING AND TEMPORARY CONSTRUCTION PAVEMENT MARKINGS THROUGHOUT THE PROJECT AND AT THE PROJECT COMPLETION.
- ALL PAVEMENT MARKINGS SHALL CONFORM TO CITY OF HOUSTON STANDARDS AND SPECIFICATIONS AND GENERAL GUIDELINES OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
- THE PERMANENT PAVEMENT MARKINGS MAY BE MODIFIED AS DIRECTED BY THE CITY TRAFFIC ENGINEER.
- THE DESIGN SPEED FOR THE ROAD IS: 35 MPH. THE POSTED SPEED LIMIT IS: 30 MPH.
- ALL LANE DIMENSIONS ARE FROM CENTER OF LANE LINE, CENTER OF DOUBLE LANE LINE, FACE OF CURB, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
- THE PAVEMENT MARKING DRAWINGS ARE SCHEMATIC ONLY. THE CONTRACTOR SHALL FOLLOW ALL DIMENSIONS, DETAILS AND STANDARDS WHEN INSTALLING PAVEMENT MARKINGS AND SYMBOLS.
- THE FINAL LONGITUDINAL STRIPING SHALL BE 60 MIL (0.060") THICK HOT-SPRAYED THERMOPLASTIC PLACED OVER THE TEMPORARY STRIPING WITHIN 14 TO 30 CALENDAR DAYS AFTER COMPLETION OF THE FINAL PAVEMENT SURFACE, OR AS DIRECTED BY THE CITY TRAFFIC ENGINEER. ALL OTHER PAVEMENT MARKINGS SHALL BE APPLIED AT THE SAME TIME. TEMPORARY STRIPING SHALL BE WATER BASED PAINT.
- ALL FINAL TRANSVERSE MARKINGS SHALL BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. ALL PAVEMENT ARROWS AND LEGENDS SHALL ALSO BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. PREFORMED THERMOPLASTIC APPLICATIONS MAY BE USED IF ONLY APPROVED BY THE CITY TRAFFIC ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT AND INSTALLATION OF PAVEMENT MARKINGS OF FINAL SURFACE COURSE FOLLOWING CONTROL POINTS THAT HAVE BEEN SET NO MORE THAN 50 FEET APART ALONG THE LINES TO BE IMPLEMENTED. IN TANGENT SECTIONS OF A ROAD WHERE THE PAVEMENT MARKING PATTERN DOES NOT CHANGE, CONTROL POINTS CAN BE SET AT 200 FEET SPACING. THE LAYOUT AND INSPECTION OF ALL PAVEMENT MARKINGS SHALL BE APPROVED BY THE CITY HOUSTON REPRESENTATIVE PRIOR TO THE APPLICATION OF MATERIALS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE FINAL SURFACE COURSE IS PLACED SO THAT THE STRIPING IS OFFSET NO MORE THAN ONE FOOT CLEAR OF THE CONSTRUCTION JOINT, UNLESS OTHERWISE DIRECTED BY THE CITY TRAFFIC ENGINEER.
- ALL RAISED PAVEMENT MARKERS (RPMS) SHALL BE INSTALLED SO THAT THE REFLECTIVE FACE OF EACH MARKER IS FACING THE DIRECTION OF TRAFFIC AND IS PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW. TYPE C PAVEMENT MARKERS SHALL BE INSTALLED SO THAT THE CLEAR FACE OF EACH MARKER IS FACING THE APPROACHING TRAFFIC FLOW AND PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW.
- ALL REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED IN ACCORDANCE TO THE CITY OF HOUSTON STANDARD SPECIFICATION 02762. APPLYING OVER EXISTING PAVEMENT MARKINGS DOES NOT CONSTITUTE AS APPROVED OBLITERATION METHOD.
- THE ENGINEER OF RECORD SHALL BE REQUIRED TO PRODUCE AS-BUILT OF PAVEMENT MARKINGS PLANS WITHIN 30 DAYS AFTER COMPLETION OF PAVEMENT MARKING IMPLEMENTATION.
- BLUE RPMS MAY BE PLACED ADJACENT TO FIRE HYDRANTS WITH THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
- FOR ALL CONSTRUCTION, ALL PAVEMENT MARKINGS AND SIGNING SHALL BE INSTALLED AND SHALL BE PAID BY THE PROJECT OWNER/DEVELOPER. FINAL INSPECTION AND ACCEPTANCE OF PAVEMENT MARKINGS SHALL BE PERFORMED BY TRAFFIC OPERATIONS DIVISION REPRESENTATIVE (713-803-3054).



9/12/14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
SIGNING AND PAVEMENT MARKING  
STA 17+00 TO STA 26+00

SHEET 2 OF 3  
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY Dwg No.	
1" = 40'		
SHEET:	142 OF 226	

REVISIONS

No. DATE

12/31/05 PM 9/12/2014 9/12/2014

130-022.dgn

\\pww\ledpw\_ledco\_int\proj\ctw\ise\Documents\Projects\130-022\Drawings\Sign-Pavement Marking\001-PM-02.dgn

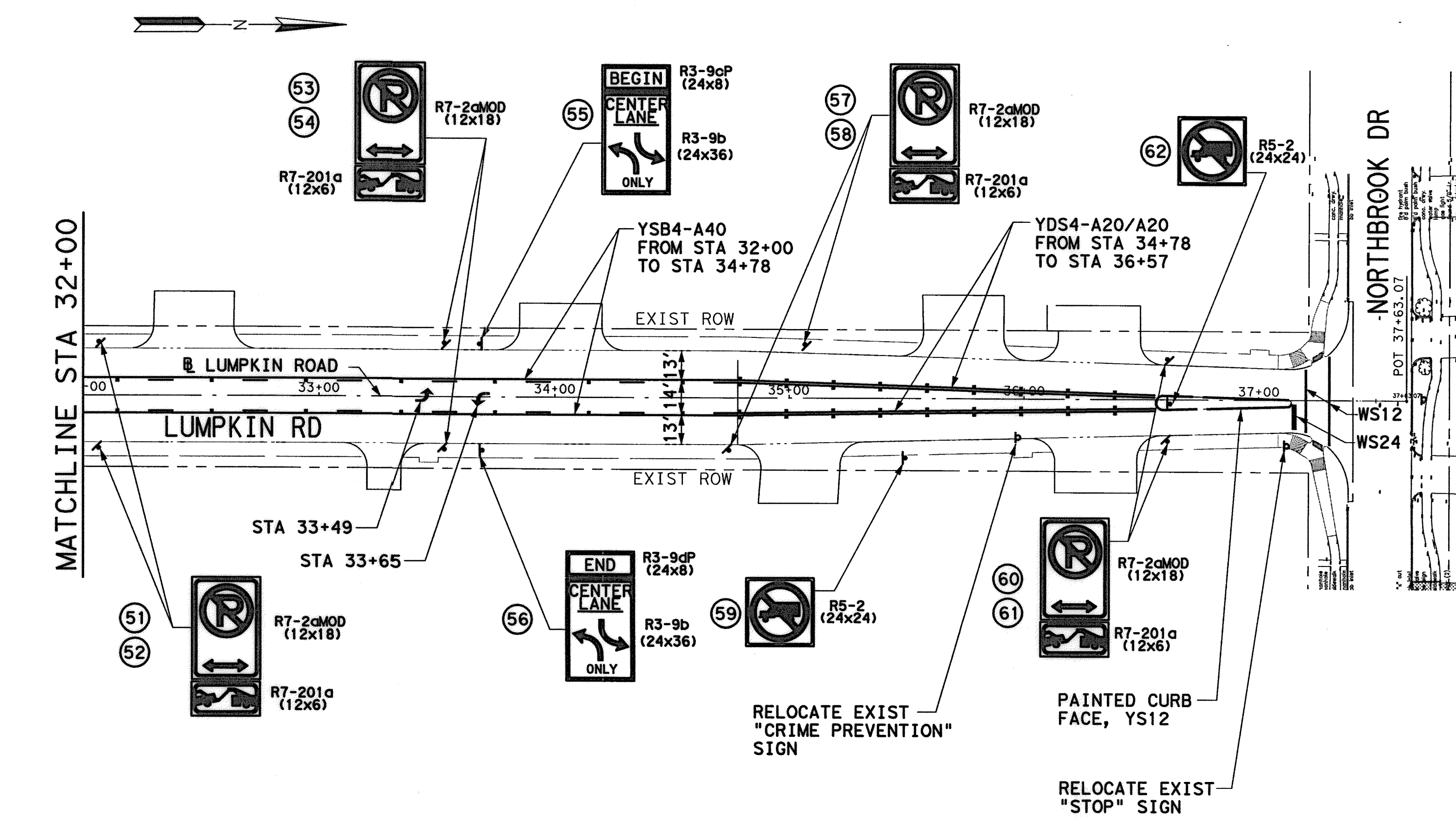
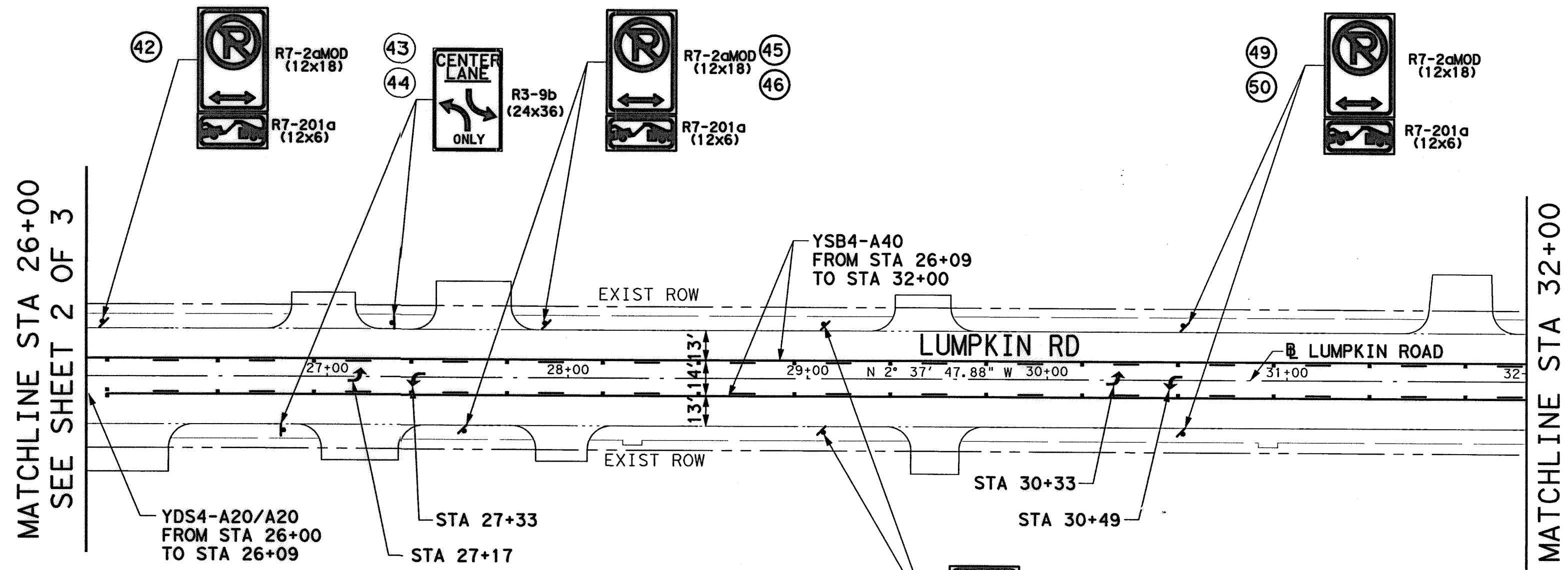
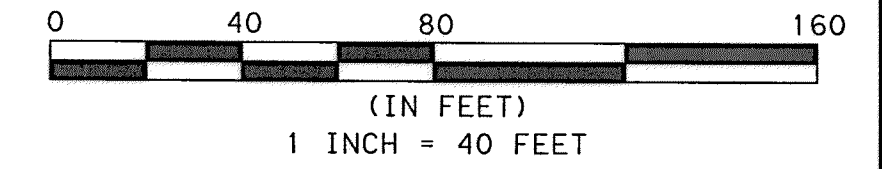
MJGuthrie

REFERENCE SPEC. NO.	DESCRIPTION	UNIT	QTY
02764	RRPM, Type II-A-A "A"	EA	81
02767	TPM (4-Inch, Double Solid, Yellow "YDS4")	LF	367
02767	TPM (4-Inch, Solid & Broken, Yellow "YSB4")	LF	1738
02767	TPM (Arrow)	EA	6
01554	Relocate Existing Signs	EA	2
01554	Placement of Permanent Signs	EA	21

RRPM = RAISED REFLECTIVE PAVEMENT MARKERS  
TPM = THERMOPLASTIC PAVEMENT MARKINGS

**GENERAL PAVEMENT MARKING NOTES:**

- PRIOR TO START OF CONSTRUCTION, ALL EXISTING PAVEMENT MARKINGS WITHIN THE AREA OF CONSTRUCTION SHALL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE CITY INSPECTOR AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING ALL EXISTING PAVEMENT MARKINGS AND LANE CONFIGURATIONS WILL BE DUPLICATED AGAIN. THIS REVIEW CAN BE DONE IN CONJUNCTION WITH SIGN INVENTORY. THE CONTRACTOR IS HELD ACCOUNTABLE FOR EXISTING AND TEMPORARY CONSTRUCTION PAVEMENT MARKINGS THROUGHOUT THE PROJECT AND AT THE PROJECT COMPLETION.
- ALL PAVEMENT MARKINGS SHALL CONFORM TO CITY OF HOUSTON STANDARDS AND SPECIFICATIONS AND GENERAL GUIDELINES OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
- THE PERMANENT PAVEMENT MARKINGS MAY BE MODIFIED AS DIRECTED BY THE CITY TRAFFIC ENGINEER.
- THE DESIGN SPEED FOR THE ROAD IS: 35 MPH. THE POSTED SPEED LIMIT IS: 30 MPH.
- ALL LANE DIMENSIONS ARE FROM CENTER OF LANE LINE, CENTER OF DOUBLE LANE LINE, FACE OF CURB, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
- THE PAVEMENT MARKING DRAWINGS ARE SCHEMATIC ONLY. THE CONTRACTOR SHALL FOLLOW ALL DIMENSIONS, DETAILS AND STANDARDS WHEN INSTALLING PAVEMENT MARKINGS AND SYMBOLS.
- THE FINAL LONGITUDINAL STRIPING SHALL BE 60 MIL (0.060") THICK HOT-SPRAYED THERMOPLASTIC PLACED OVER THE TEMPORARY STRIPING WITHIN 14 TO 30 CALENDAR DAYS AFTER COMPLETION OF THE FINAL PAVEMENT SURFACE, OR AS DIRECTED BY THE CITY TRAFFIC ENGINEER. ALL OTHER PAVEMENT MARKINGS SHALL BE APPLIED AT THE SAME TIME. TEMPORARY STRIPING SHALL BE WATER BASED PAINT.
- ALL FINAL TRANSVERSE MARKINGS SHALL BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. ALL PAVEMENT ARROWS AND LEGENDS SHALL ALSO BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. PREFORMED THERMOPLASTIC APPLICATIONS MAY BE USED IF ONLY APPROVED BY THE CITY TRAFFIC ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT AND INSTALLATION OF PAVEMENT MARKINGS OF FINAL SURFACE COURSE FOLLOWING CONTROL POINTS THAT HAVE BEEN SET NO MORE THAN 50 FEET APART ALONG THE LINES TO BE IMPLEMENTED. IN TANGENT SECTIONS OF A ROAD WHERE THE PAVEMENT MARKING PATTERN DOES NOT CHANGE, CONTROL POINTS CAN BE SET AT 200 FEET SPACING. THE LAYOUT AND INSPECTION OF ALL PAVEMENT MARKINGS SHALL BE APPROVED BY THE CITY HOUSTON REPRESENTATIVE PRIOR TO THE APPLICATION OF MATERIALS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE FINAL SURFACE COURSE IS PLACED SO THAT THE STRIPING IS OFFSET NO MORE THAN ONE FOOT CLEAR OF THE CONSTRUCTION JOINT, UNLESS OTHERWISE DIRECTED BY THE CITY TRAFFIC ENGINEER.
- ALL RAISED PAVEMENT MARKERS (RPMS) SHALL BE INSTALLED SO THAT THE REFLECTIVE FACE OF EACH MARKER IS FACING THE DIRECTION OF TRAFFIC AND IS PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW. TYPE C PAVEMENT MARKERS SHALL BE INSTALLED SO THAT THE CLEAR FACE OF EACH MARKER IS FACING THE APPROACHING TRAFFIC FLOW AND PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW.
- ALL REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED IN ACCORDANCE TO THE CITY OF HOUSTON STANDARD SPECIFICATION 02762. APPLYING OVER EXISTING PAVEMENT MARKINGS DOES NOT CONSTITUTE AS APPROVED OBLITERATION METHOD.
- THE ENGINEER OF RECORD SHALL BE REQUIRED TO PRODUCE AS-BUILT OF PAVEMENT MARKINGS PLANS WITHIN 30 DAYS AFTER COMPLETION OF PAVEMENT MARKING IMPLEMENTATION.
- BLUE RPMS MAY BE PLACED ADJACENT TO FIRE HYDRANTS WITH THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
- FOR ALL CONSTRUCTION, ALL PAVEMENT MARKINGS AND SIGNING SHALL BE INSTALLED AND SHALL BE PAID BY THE PROJECT OWNER/DEVELOPER.
- FINAL INSPECTION AND ACCEPTANCE OF PAVEMENT MARKINGS SHALL BE PERFORMED BY TRAFFIC OPERATIONS DIVISION REPRESENTATIVE (713-803-3054).



9/12/14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

**LUMPKIN ROAD**  
N-T17000-0012-3  
SIGNING AND PAVEMENT MARKING  
STA 26+00 TO END PROJECT

SHEET 3 OF 3  
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

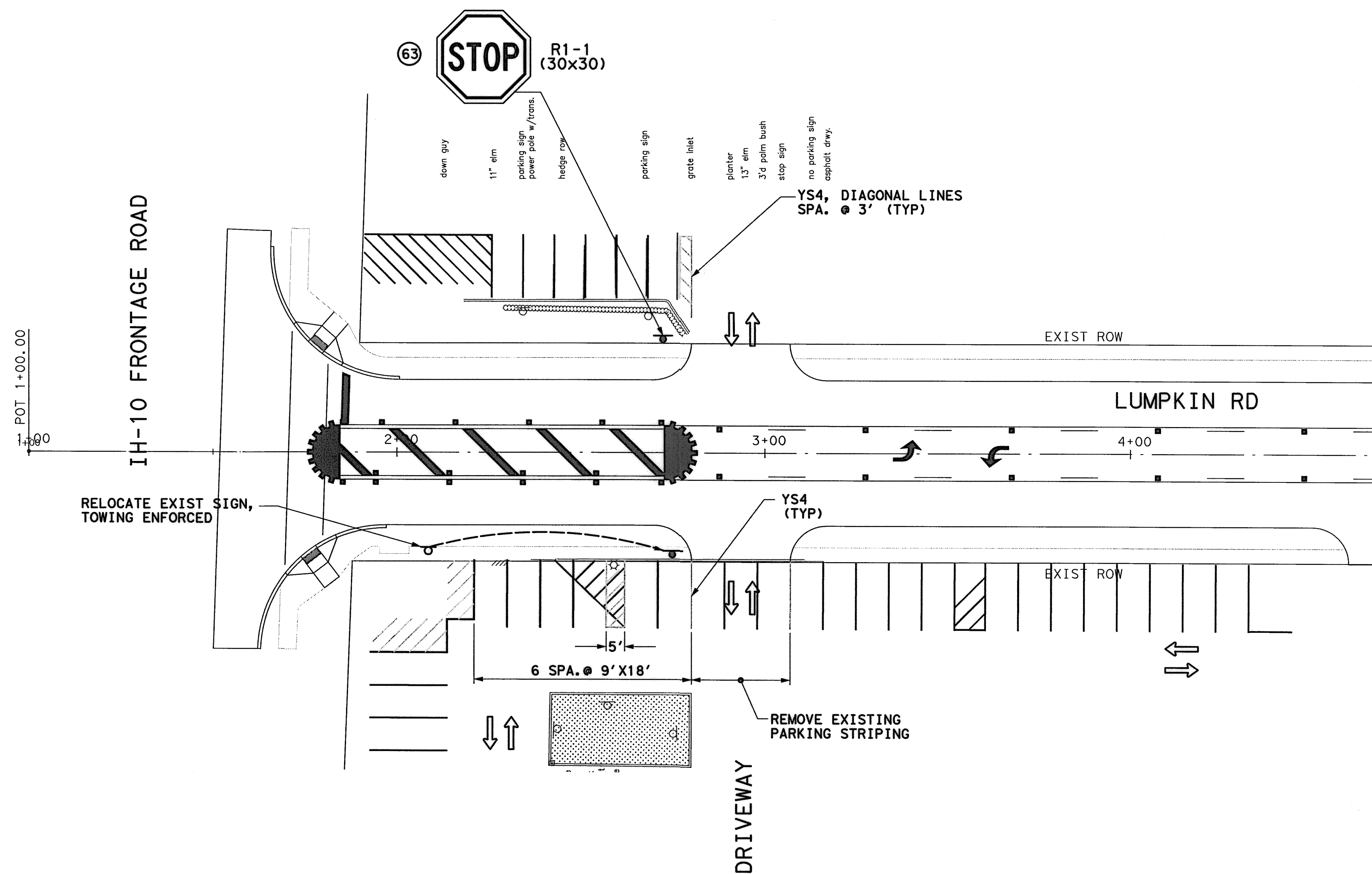
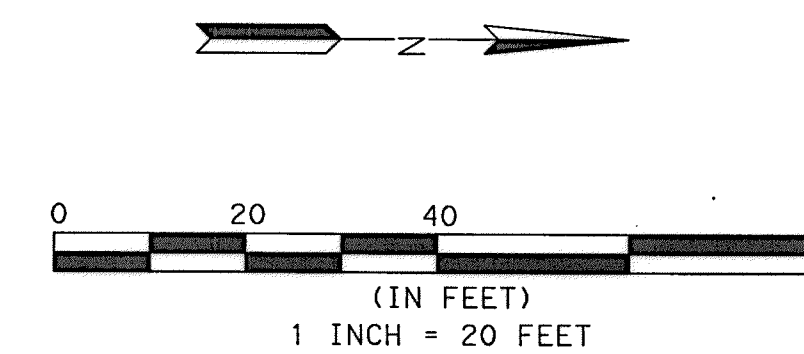
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SW

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DNG NO.
1" = 40'	
SHEET:	
143 OF 226	

APP. REVISIONS DATE No. DATE  
MUGubhr1e 12-32-17 PM 9/12/2014 pw\l\ledpw\_ledoc\_instr\_projects\130-10384-001\4-0-Production\4-01-Drawings\Sign-Pavement\_Markings\001-PW-03.dgn

REFERENCE SPEC. NO.	DESCRIPTION	UNIT	QTY
02767	Remove Existing Striping	LF	180
02767	TPM (4-Inch, Solid, Yellow "YS4")	LF	390
01554	Relocate Existing Signs	EA	1
01554	Placement of Permanent Signs	SF	7

TPM = THERMOPLASTIC PAVEMENT MARKINGS



LEGEND:  
 TRAFFIC CIRCULATION

EXISTING PARKING STALLS REMOVED = 4 SPACES  
 NEW PARKING STALLS INSTALLED = 4 SPACES

9/12/14

Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

MEMORIAL CITY  
 REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews  
 & Newnam, Inc.  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 SITE PARKING LAYOUT

SHEET 1 OF 3  
 CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
1" = 20'	
SHEET:	
144 OF 226	

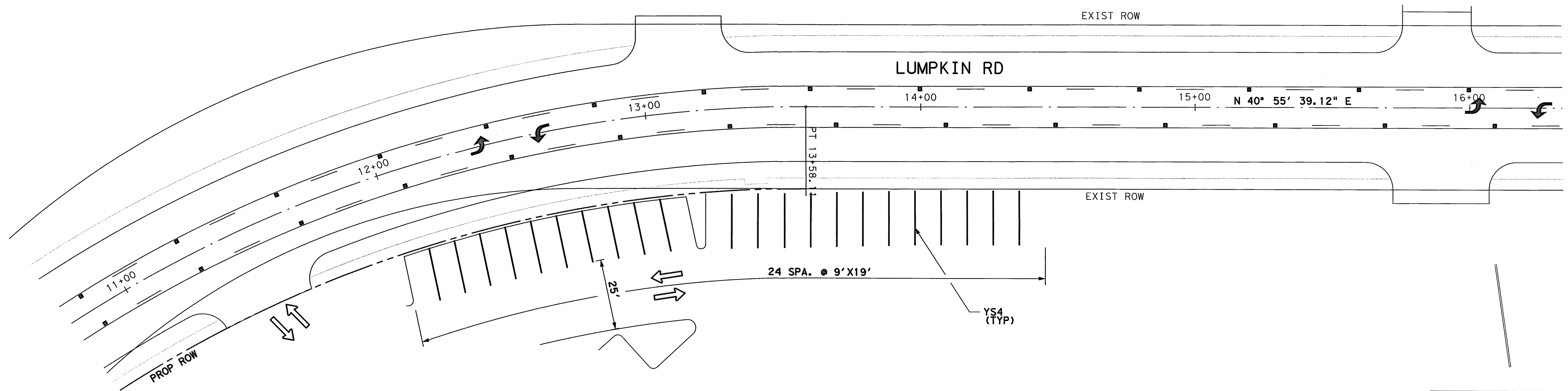
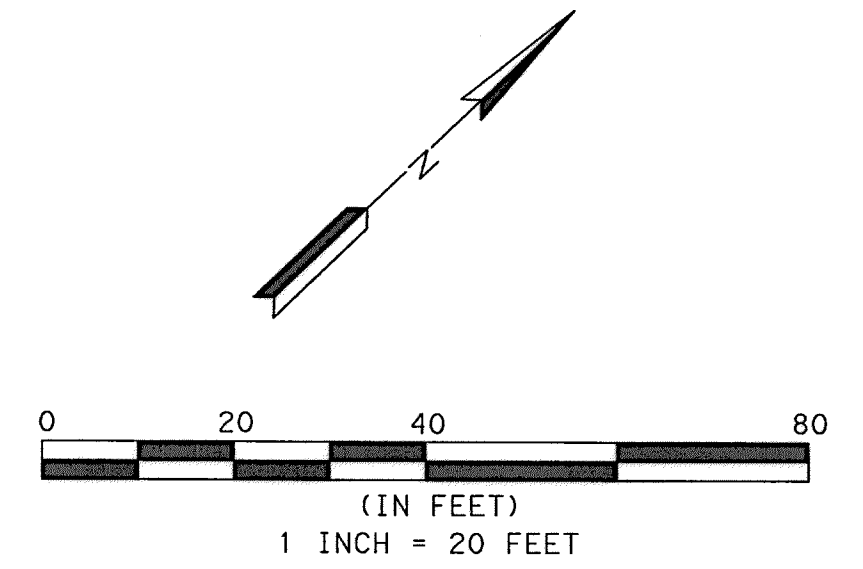
12:35:21 PM 9/12/2014  
 M:\Guthrie



REFERENCE SPEC. NO.	DESCRIPTION	UNIT	QTY
02767	TPM (4-Inch, Solid, Yellow "YS4")	LF	418

TPM = THERMOPLASTIC PAVEMENT MARKINGS

HOUSTON COMMUNITY COLLEGE



HOME DEPOT PARKING LOT  
(SHOWN PARTIALLY)

LEGEND:  
 TRAFFIC CIRCULATION

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

**LAN Lockwood, Andrews  
& Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
SITE PARKING LAYOUT

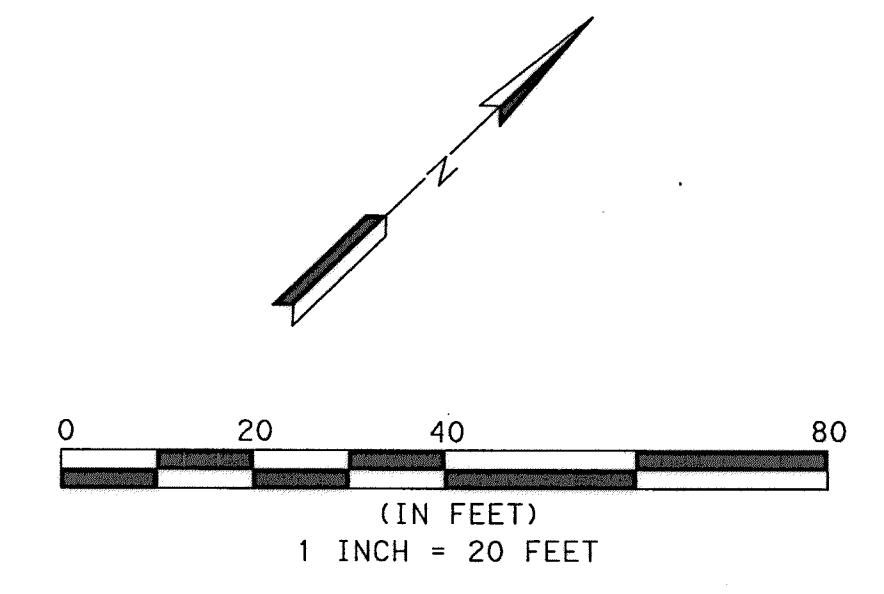
SHEET 2 OF 3  
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG NO.
1" = 20'		
SHEET:		
145 OF 226		

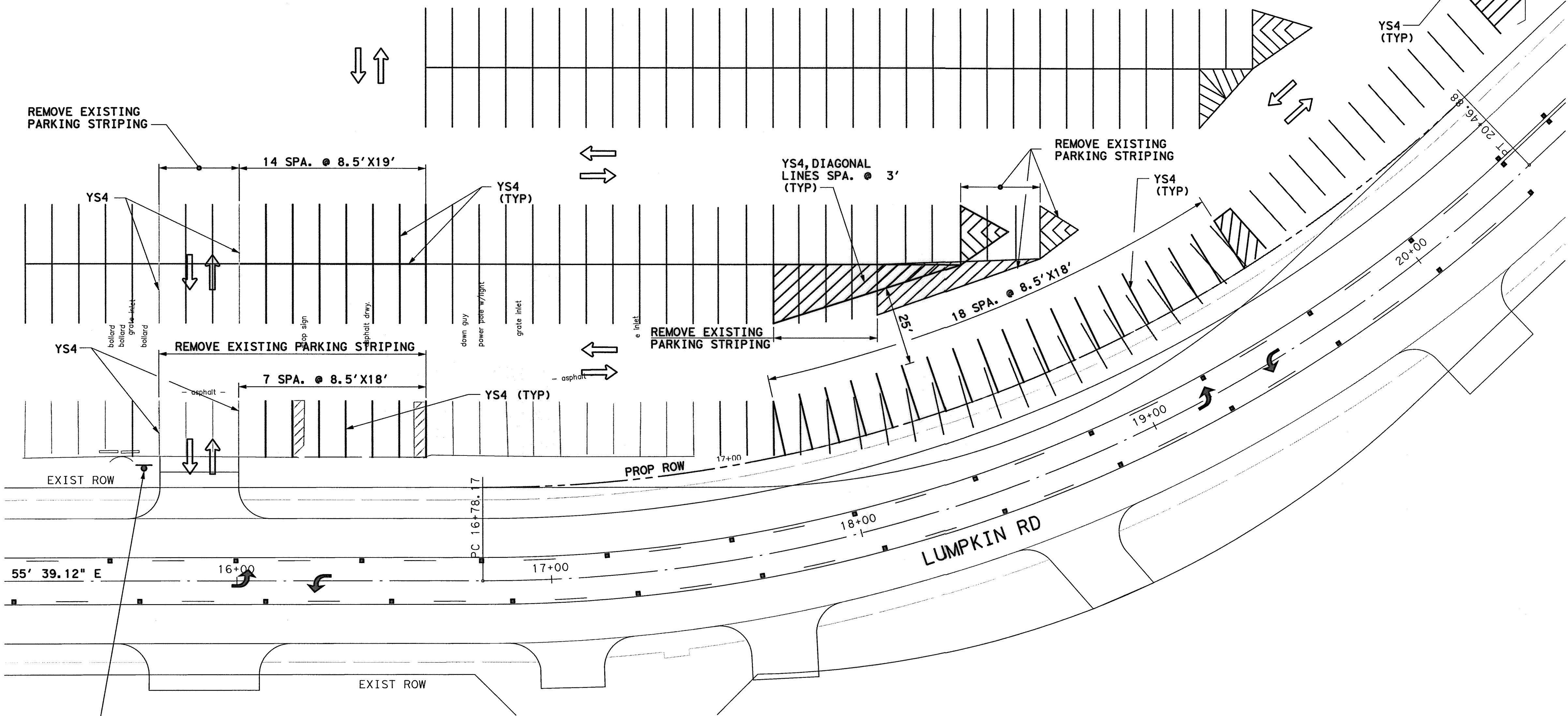
pww \ \ l adpw. l adco. int\ projects\ Documents\ Projects\ 130-10384-001\ 4-0-Production\ 4-01-Drawings\ Sign-Pavement Marking\ 001-PM-SITE02.dgn 9/12/2014 12:35:32 PM MUGuthrie

REFERENCE SPEC. NO.	DESCRIPTION	UNIT	QTY
02767	Remove Existing Striping	LF	1480
02767	TPM (4-Inch, Solid, Yellow "YS4")	LF	1580
01554	Placement of Permanent Signs	SF	7

TPM = THERMOPLASTIC PAVEMENT MARKINGS



HOUSTON COMMUNITY COLLEGE PARKING LOT  
(SHOWN PARTIALLY)



HOME DEPOT  
DRIVEWAY

LEGEND:  
→ TRAFFIC CIRCULATION

EXISTING PARKING STALLS REMOVED = 37 SPACES  
NEW PARKING STALLS INSTALLED = 35 SPACES

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews  
& Newnam, Inc.**  
A LEO A DALY COMPANY

**LUMPKIN ROAD  
N-T17000-0012-3**

**SITE PARKING LAYOUT**

SHEET 3 OF 3  
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG NO.
1" = 20'		
SHEET:		
146 OF 226		

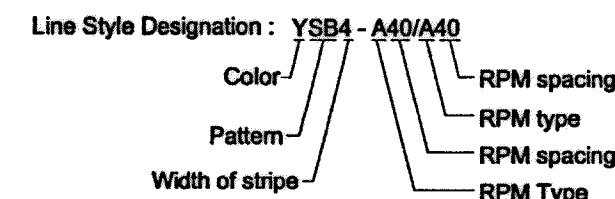
APP: REVISIONS: DATE: No. 12/35/14 PM 12/35/14 PM 9/12/2014 P:\projects\130-10384-001\4-0-Production\130-10384-001\4-0-Production\Sign-Pavement-Mark1ng\001-PM-SITE03.dgn

GENERAL PAVEMENT MARKING NOTES:

1. PRIOR TO START OF CONSTRUCTION, ALL EXISTING PAVEMENT MARKINGS WITHIN THE AREA OF CONSTRUCTION SHALL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE CITY INSPECTOR AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING ALL EXISTING PAVEMENT MARKINGS AND LANE CONFIGURATIONS WILL BE DUPLICATED AGAIN. THIS REVIEW CAN BE DONE IN CONJUNCTION WITH SIGN INVENTORY. THE CONTRACTOR IS HELD ACCOUNTABLE FOR EXISTING AND TEMPORARY CONSTRUCTION PAVEMENT MARKINGS THROUGHOUT THE PROJECT AND AT THE PROJECT'S COMPLETION.
2. ALL PAVEMENT MARKINGS SHALL CONFORM TO CITY OF HOUSTON STANDARDS AND SPECIFICATIONS AND GENERAL GUIDELINES OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
3. THE PERMANENT PAVEMENT MARKINGS MAY BE MODIFIED AS DIRECTED BY THE CITY TRAFFIC ENGINEER.
4. THE DESIGN SPEED FOR THE ROAD IS: 35. THE POSTED SPEED LIMIT IS: 35.
5. ALL LANE DIMENSIONS ARE FROM CENTER OF LANE LINE, CENTER OF DOUBLE LANE LINE, FACE OF CURB, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
6. THE PAVEMENT MARKING DRAWINGS ARE SCHEMATIC ONLY. THE CONTRACTOR SHALL FOLLOW ALL DIMENSIONS, DETAILS, AND STANDARDS WHEN INSTALLING PAVEMENT MARKINGS AND SYMBOLS.
7. THE FINAL LONGITUDINAL STRIPINGS SHALL BE 90 MIL (0.090") THICK HOT-SPRAYED THERMOPLASTIC PLACED OVER THE TEMPORARY STRIPING WITHIN 14 TO 30 CALENDAR DAYS AFTER COMPLETION OF THE FINAL PAVEMENT SURFACE, OR AS DIRECTED BY THE CITY TRAFFIC ENGINEER. ALL OTHER PAVEMENT MARKINGS SHALL BE APPLIED AT THE SAME TIME. TEMPORARY STRIPING SHALL BE WATER BASED PAINT.
8. ALL FINAL TRANSVERSE MARKINGS SHALL BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. ALL PAVEMENT ARROWS AND LEGENDS SHALL ALSO BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. PREFORMED THERMOPLASTIC APPLICATIONS MAY BE USED IF ONLY APPROVED BY THE CITY TRAFFIC ENGINEER.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT AND INSTALLATION OF PAVEMENT MARKINGS OF FINAL SURFACE COURSE FOLLOWING CONTROL POINTS THAT HAVE BEEN SET NO MORE THAN 50 FEET APART ALONG THE LINES TO BE IMPLEMENTED. IN TANGENT SECTIONS OF A ROAD WHERE THE PAVEMENT MARKING PATTERN DOES NOT CHANGE, CONTROL POINTS CAN BE SET AT 200 FEET SPACING. THE LAYOUT AND INSPECTION OF ALL PAVEMENT MARKINGS SHALL BE APPROVED BY CITY OF HOUSTON REPRESENTATIVE PRIOR TO THE APPLICATION OF MATERIALS.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE FINAL SURFACE COURSE IS PLACED SO THAT THE STRIPING IS OFFSET NO MORE THAN ONE FOOT CLEAR OF THE CONSTRUCTION JOINT, UNLESS OTHERWISE DIRECTED BY THE CITY TRAFFIC ENGINEER.
11. ALL RAISED PAVEMENT MARKERS (RPMs) SHALL BE INSTALLED SO THAT THE REFLECTIVE FACE OF EACH MARKER IS FACING THE DIRECTION OF TRAFFIC AND IS PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW. TYPE C PAVEMENT MARKERS SHALL BE INSTALLED SO THAT THE CLEAR FACE OF EACH MARKER IS FACING THE APPROACHING TRAFFIC FLOW AND PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW.
12. ALL REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED IN ACCORDANCE TO CITY OF HOUSTON STANDARD SPECIFICATION 02782. APPLYING OVER EXISTING PAVEMENT MARKINGS DOES NOT CONSTITUTE AS APPROVED OBLITERATION METHOD.
13. THE ENGINEER OF RECORD SHALL BE REQUIRED TO PRODUCE AS-BUILT OF PAVEMENT MARKING PLANS WITHIN 90 DAYS AFTER COMPLETION OF PAVEMENT MARKING IMPLEMENTATION.
14. BLUE RPMs MAY BE PLACED ADJACENT TO FIRE HYDRANTS WITH THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
15. FOR ALL CONSTRUCTION, ALL PAVEMENT MARKINGS AND SIGNING SHALL BE INSTALLED AND SHALL BE PAID BY THE PROJECT OWNER/DEVELOPER.
16. FINAL INSPECTION AND ACCEPTANCE OF PAVEMENT MARKINGS SHALL BE PERFORMED BY TRAFFIC OPERATIONS DIVISION REPRESENTATIVE (713-803-3054).

Description and Application of Pavement Marking Lines				
Line Series	Color	Description	Width Inches	Typical Applications
WB	White	Broken (10' stripe w/ 30' gap)	4"	- Lane lines between travel lanes in the same direction where changing of lanes is permitted.
WS	White	Solid	4"	- Edge lines to delineate the right edge of the roadway.
			6"	- Left edge of bicycle lane and lane lines between travel lanes in the same direction where changing of lanes is discouraged.
			12"	- Perpendicular crosswalk lines.
			24"	- Stop bars at intersections (signalized and unsignalized).
24"	- Hatching at high visibility crosswalks.			
12", 24"	- Diagonal hatching used in gore between same direction of travel lanes.			
WG	White	Guide (2' stripe w/6' gap)	6" 6"	- Guide lines through intersections. - Taper lines for turn lanes.
YS	Yellow	Solid	4" 12", 24"	- Edge lines to delineate the left edge of a divided roadway, a one-way road, or ramp. - Diagonal hatching used in gore between opposing direction of travel lanes.
YDS	Yellow	Double Solid	4" - (4") - 4" (gap)	- Centerline that separates opposing travel lanes and delineation of median islands.
YDB	Yellow	Double Broken	4" - (4") - 4" (gap)	- Defines the edges of center reversible lanes that are used as TWLTLs during intermittent periods.
YB	Yellow	Broken (10' stripe w/ 30' gap)	4"	- Separates travel lanes in opposite directions where passing is permitted in both directions of travel.
YSB	Yellow	Solid & Broken Broken (10' stripe w/ 30' gap)	4" - (4") - 4" (gap)	- Separates travel lanes in opposite directions where passing is permitted in one direction and prohibited in the opposite direction. - Used for edge of two-way left-turn lanes (TWLTL).

Description and Application of Reflective Raised Pavement Markers (RRPM)				
RRPM Types	Color	COH Stand. Spec. Sec. 02764 Equivalent	Description	
C	Clear	Type I-C	- Approach face that reflects white light, and the other side does not reflect.	
R	Clear & Red	Type II-C-R	- Approach face that reflects white light, and the other side reflects red light.	
A	Amber & Amber	Type II-A-A	- Approach face and the other side both reflect amber light.	



CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

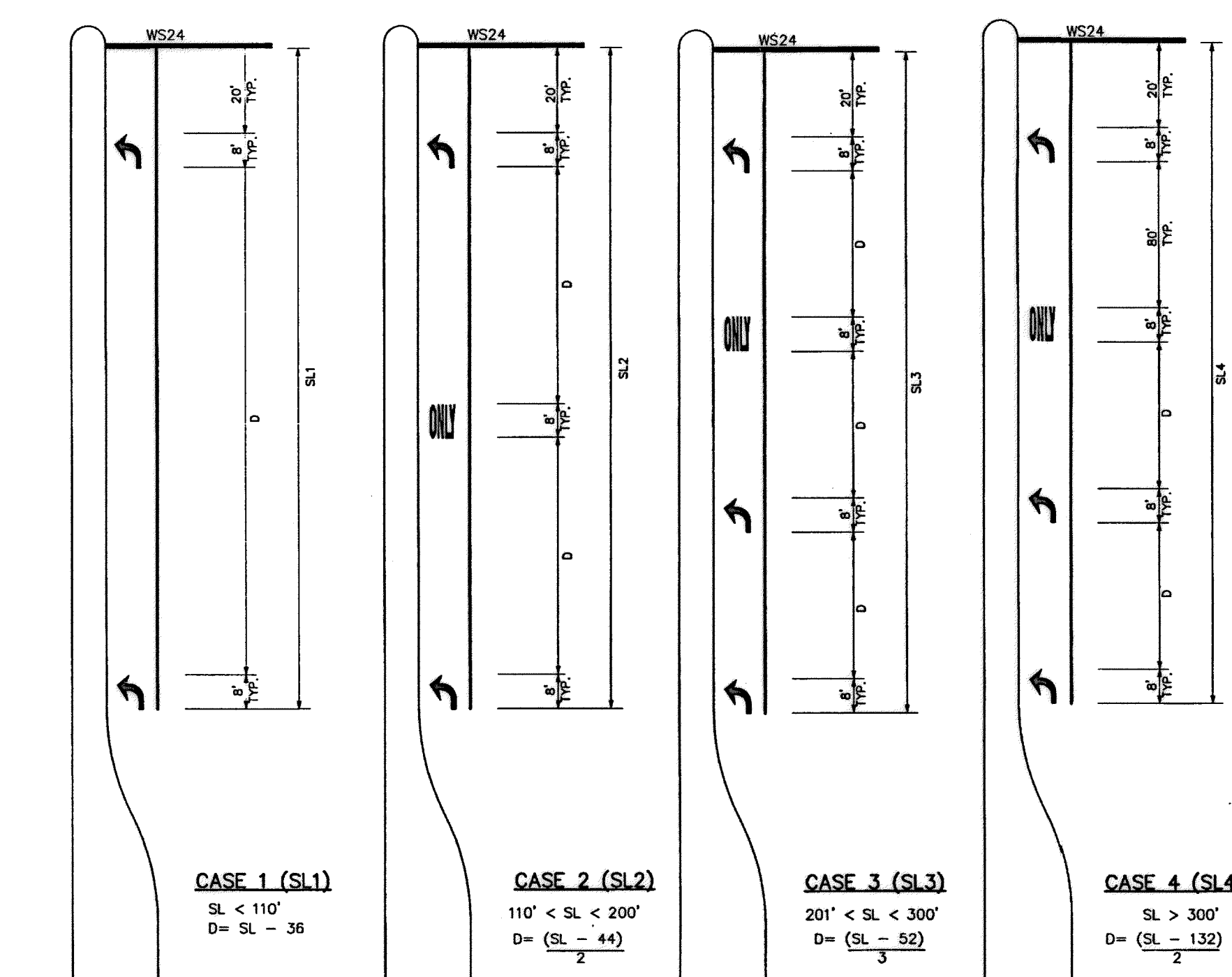
GENERAL NOTES AND LEGENDS

(NOT TO SCALE)

APPROVED BY: *[Signature]*  
CITY ENGINEER

THOMAS D. DUNCAN, P.E.  
98355  
DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JUL-01-2012 DWG NO.: 01510-01



- KEY (FOR TURN LANES ONLY):  
SL - STORAGE LENGTH (FEET)  
D - DISTANCE BETWEEN ARROWS AND/OR WORDS (FEET)
- GENERAL NOTES:  
1. ALL CASES AND DETAILS ALSO APPLY TO RIGHT-TURN LANES.  
2. FOR DUAL-TURN LANES, DIMENSIONS SHALL BE THE SAME FOR EACH LANE.  
3. SL DIMENSION IS FROM BACK OF STOP LINE TO END OF TURN LANE. NOTE: DO NOT INCLUDE TAPER LENGTH.  
4. PAVEMENT ARROWS AND "ONLY" LEGEND MARKINGS ARE TYPICALLY USED AT ALL SIGNALIZED INTERSECTIONS AND AT ALL UNSIGNALIZED INTERSECTIONS THAT HAVE TURN LANES.  
5. MINIMUM SL = 100'. SL MAY BE LESS THAN 100 FEET ONLY BY APPROVAL OF THE CITY TRAFFIC ENGINEER.

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

LEFT/RIGHT-TURN "ONLY" AND ARROW SPACING

(NOT TO SCALE)

APPROVED BY: *[Signature]*  
CITY ENGINEER

THOMAS D. DUNCAN, P.E.  
98355  
DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JUL-01-2012 DWG NO.: 01510-02

9/12/14

STATE OF TEXAS  
THOMAS D. DUNCAN, P.E.  
98355  
LICENSED PROFESSIONAL ENGINEER

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY

Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
SIGNING AND PAVEMENT MARKING DETAILS  
(SHEET 1 OF 6)

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWO

FILE NO. : FACILITY

DRAWING SCALE: CITY DWG NO.

NOT TO SCALE

SHEET: 147 OF 226

TRUCKS NEXT YIELD MERGE EXIT STOP ONLY

SCHOOL SIGNAL TURN LANE ENDS PED

ZONE AHEAD RIGHT LEFT ROUTE X-ING

1234567890 MPH BUS

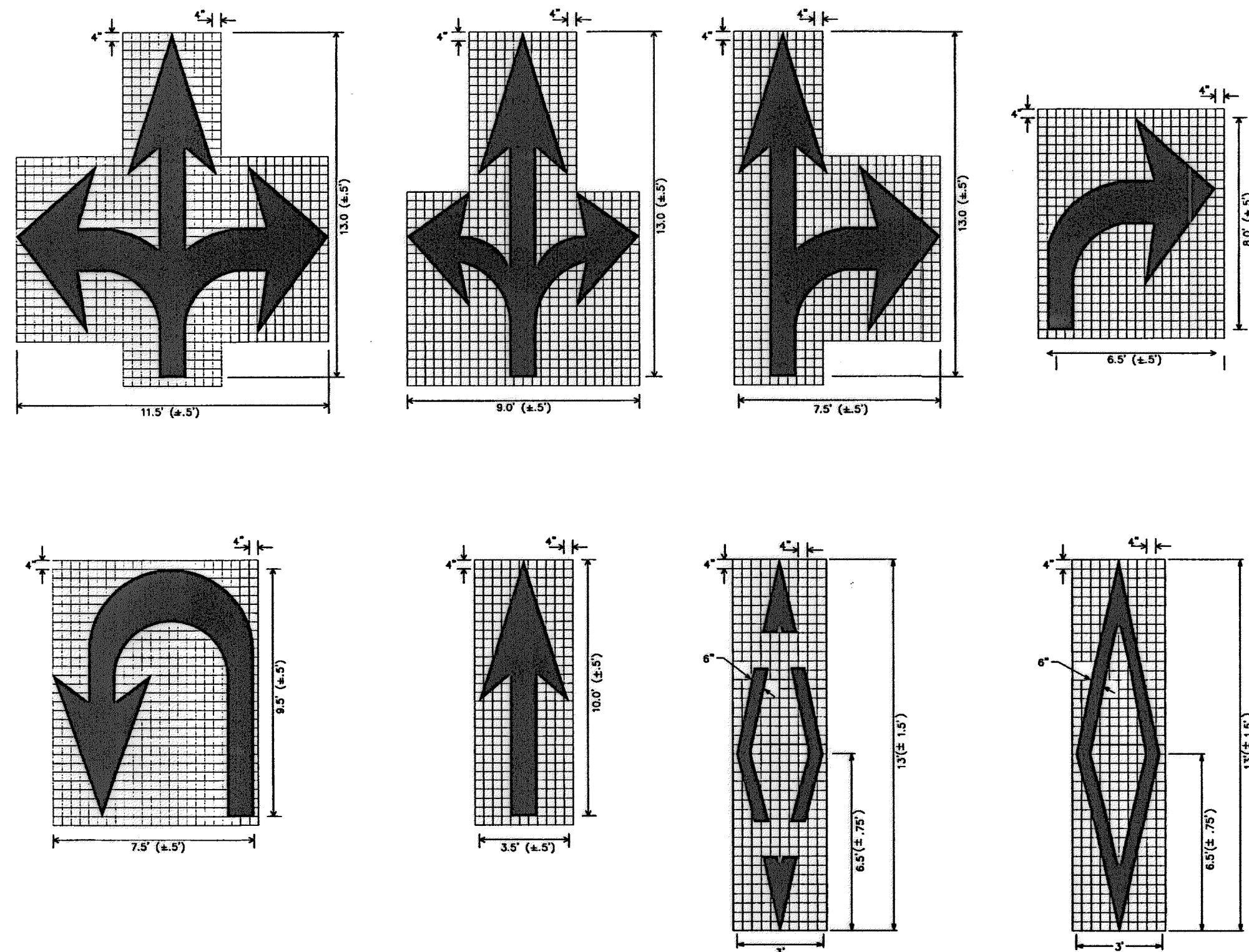
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STANDARD PAVEMENT MARKING (WORDS)

(NOT TO SCALE)

APPROVED BY: [Signature] DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JUL-01-2012 DWG NO: 01510-03



NOTES FOR PAVEMENT MARKINGS "SYMBOLS" AND "ARROWS":

- MINIMUM 8 FOOT WHITE MARKINGS SHALL BE USED, UNLESS OTHERWISE NOTED. IF MESSAGE CONSISTS OF MORE THAN ONE WORD, IT SHOULD BE PLACED WITH FIRST WORD NEAREST THE DRIVER.
- THESE DETAILS ARE STANDARD SIZE FOR NORMAL INSTALLATION. SIZES MAY BE REDUCED APPROXIMATELY ONE-THIRD DEPENDING ON CONDITIONS. SPECIAL PERMISSION NEEDED BY CITY TRAFFIC ENGINEER FOR REDUCTION BELOW ONE-THIRD OF STANDARD SIZES.
- THE LONGITUDINAL SPACE BETWEEN MARKINGS SHOULD BE 30 FEET.
- MARKINGS CONSIDERED APPROPRIATE FOR USE WHEN WARRANTED INCLUDE THE FOLLOWING:
  - A. REGULATORY
    - STOP
    - RIGHT (LEFT) TURN ONLY
    - SYMBOL ARROWS
  - B. WARNING
    - STOP AHEAD
    - SIGNAL AHEAD
    - SCHOOL
    - SCHOOL X-ING
    - PED X-ING
    - R X R (SEE SHEET 01510-08 DETAILS)
 OTHER WORDS OR SYMBOLS MAY BE NECESSARY UNDER CERTAIN CONDITIONS. SPECIAL PERMISSION NEEDED BY CITY TRAFFIC ENGINEER FOR SPECIAL CONDITIONS.
- UNCONTROLLED USE OF PAVEMENT MARKINGS CAN RESULT IN DRIVER CONFUSION. WORD AND SYMBOL MARKINGS SHOULD BE NO MORE THAN THREE LINES.
- THE WORD "STOP" SHALL NOT BE USED ON THE PAVEMENT UNLESS ACCOMPANIED BY A STOP LINE AND STOP SIGN. THE WORD "STOP" SHALL NOT BE PLACED ON THE PAVEMENT IN ADVANCE TO A STOP LINE, UNLESS EVERY VEHICLE IS REQUIRED TO STOP AT ALL TIMES (ALL-WAY STOP).
- PAVEMENT MARKINGS SHOULD GENERALLY BE NO MORE THAN ONE LANE IN WIDTH, WITH SCHOOL MESSAGES BEING THE EXCEPTION. FOR DETAILS OF SCHOOL AND SCHOOL CROSSING PAVEMENT MARKINGS, REFER TO PART VII OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
- SPACING BETWEEN STANDARD SIZE LETTERS SHOULD BE 4 INCHES (MIN). THE WIDTH OF NON-STANDARD SIZE LETTERS MAY VARY DEPENDING ON THE WIDTH OF THE TRAVEL LANES. APPROVAL BY CITY TRAFFIC ENGINEER. SPECIAL PERMISSION NEEDED FOR NON-STANDARD SIZE "LETTER" AND/OR "ARROWS".
- LANE-USE ARROW MARKINGS MAY BE USED TO CONVEY EITHER GUIDANCE OR MANDATORY MESSAGES. SINGLE TURN ARROWS USED TO CONVEY A MANDATORY MOVEMENT MUST BE ACCOMPANIED STANDARD SIGNS AND THE PAVEMENT MARKING WORD "ONLY".
- PAVEMENT MARKINGS ARE TO BE LOCATED AS SPECIFIED IN THE DESIGN PLANS.

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STANDARD PAVEMENT MARKING - SYMBOLS

(NOT TO SCALE)

APPROVED BY: [Signature] DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JUL-01-2012 DWG NO: 01510-04

9/12/14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
SIGNING AND PAVEMENT MARKING DETAILS  
(SHEET 2 OF 6)

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

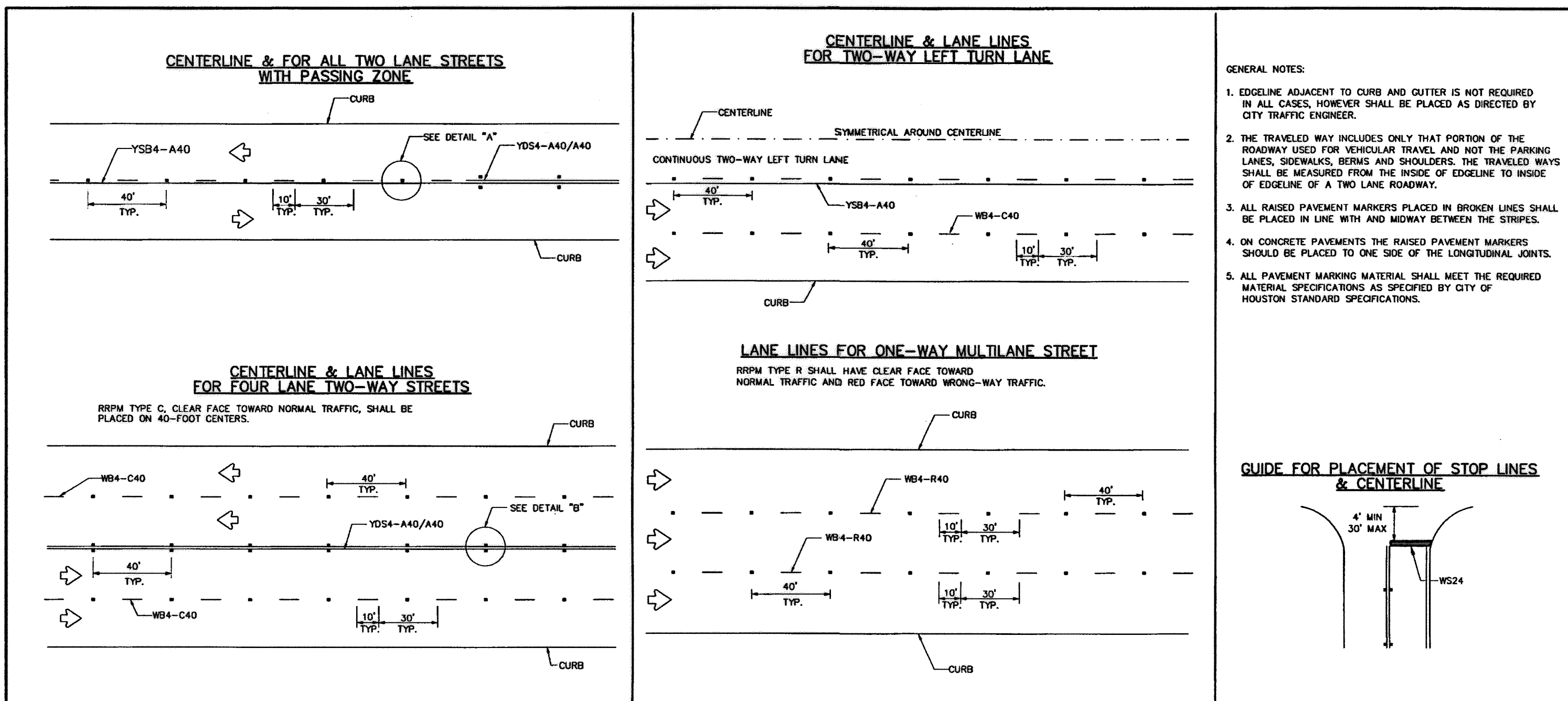
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SNOW

FILE NO. : FACILITY

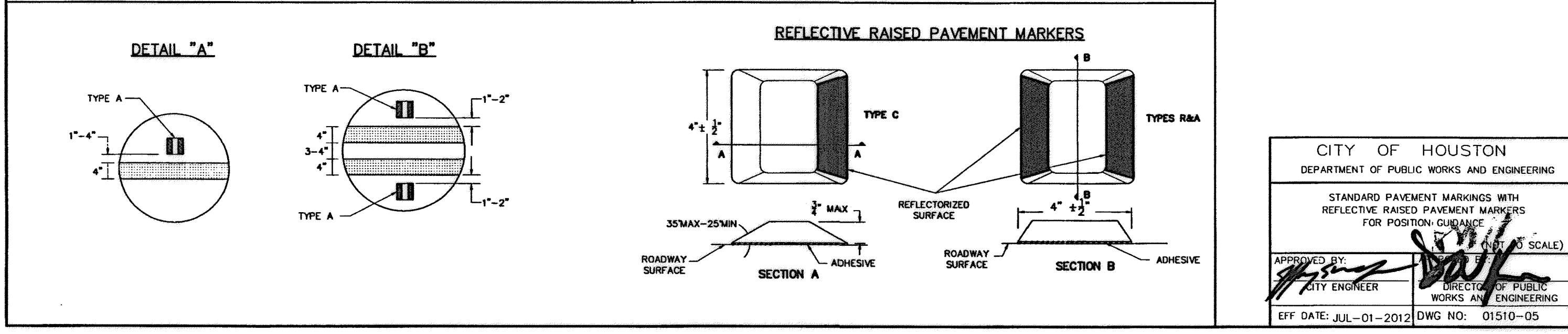
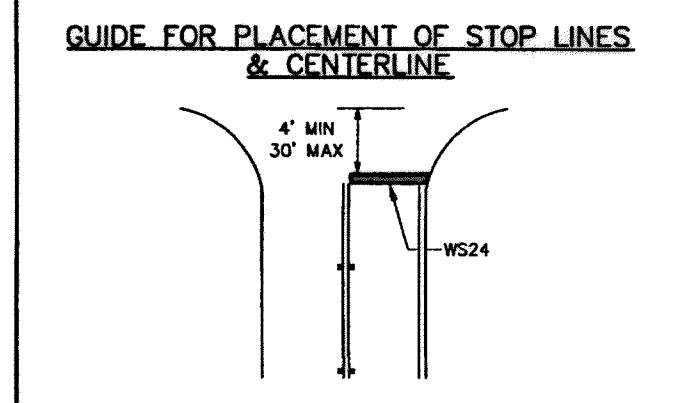
DRAWING SCALE: CITY Dwg. No.

NOT TO SCALE

SHEET: 148 OF 226



- GENERAL NOTES:
1. EDGELINE ADJACENT TO CURB AND OUTER IS NOT REQUIRED IN ALL CASES, HOWEVER SHALL BE PLACED AS DIRECTED BY CITY TRAFFIC ENGINEER.
  2. THE TRAVELED WAY INCLUDES ONLY THAT PORTION OF THE ROADWAY USED FOR VEHICULAR TRAVEL AND NOT THE PARKING LANES, SIDEWALKS, BERMS AND SHOULDERS. THE TRAVELED WAYS SHALL BE MEASURED FROM THE INSIDE OF EDGELINE TO INSIDE OF EDGELINE OF A TWO LANE ROADWAY.
  3. ALL RAISED PAVEMENT MARKERS PLACED IN BROKEN LINES SHALL BE PLACED IN LINE WITH AND MIDWAY BETWEEN THE STRIPES.
  4. ON CONCRETE PAVEMENTS THE RAISED PAVEMENT MARKERS SHOULD BE PLACED TO ONE SIDE OF THE LONGITUDINAL JOINTS.
  5. ALL PAVEMENT MARKING MATERIAL SHALL MEET THE REQUIRED MATERIAL SPECIFICATIONS AS SPECIFIED BY CITY OF HOUSTON STANDARD SPECIFICATIONS.



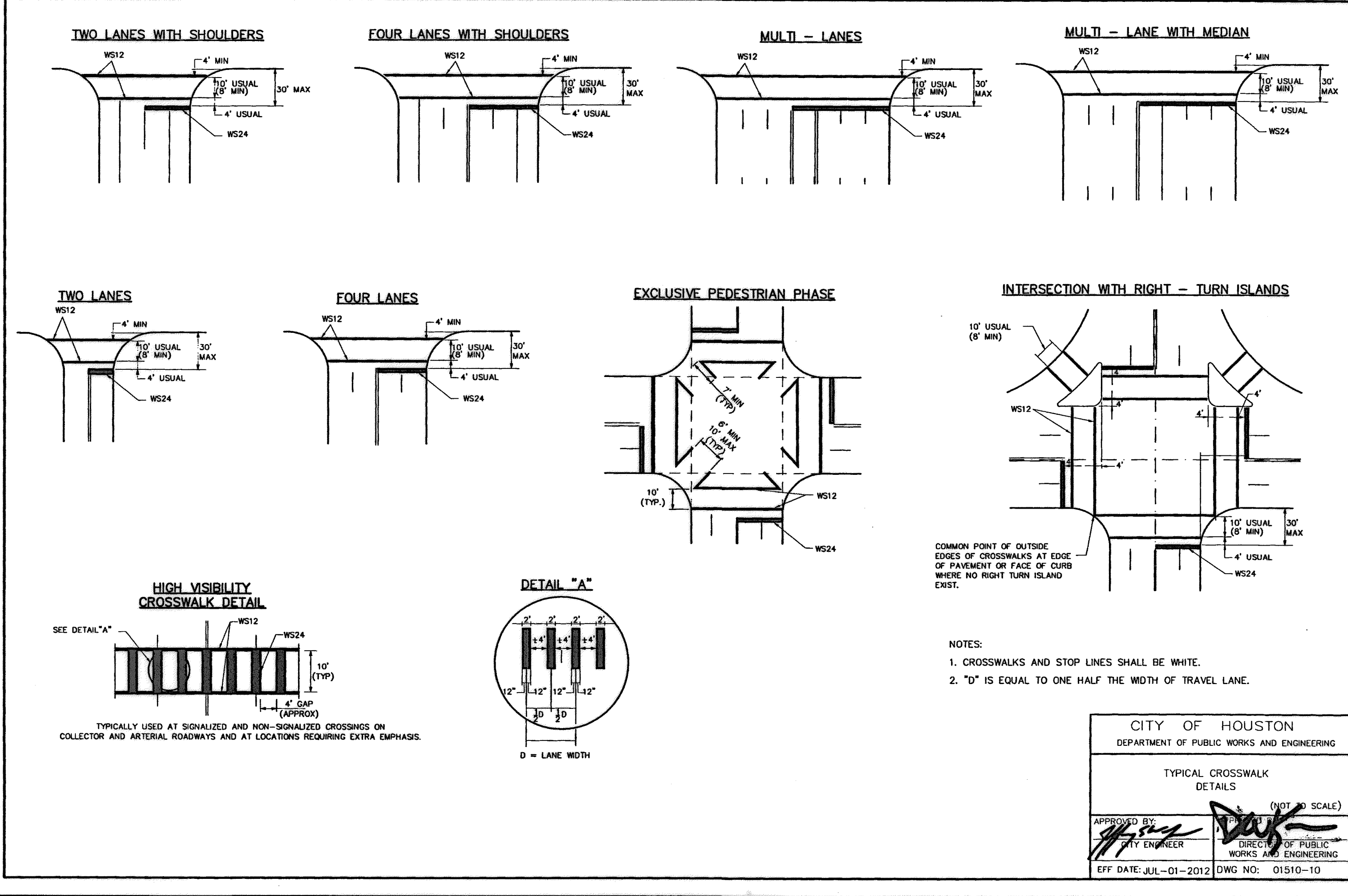
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE

APPROVED BY: [Signature]  
CITY ENGINEER

APPROVED BY: [Signature]  
DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JUL-01-2012 DWG NO: 01510-05



CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

TYPICAL CROSSWALK DETAILS (NOT TO SCALE)

APPROVED BY: [Signature]  
CITY ENGINEER

APPROVED BY: [Signature]  
DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JUL-01-2012 DWG NO: 01510-10

9/12/14

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
SIGNING AND PAVEMENT MARKING DETAILS  
(SHEET 3 OF 6)

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

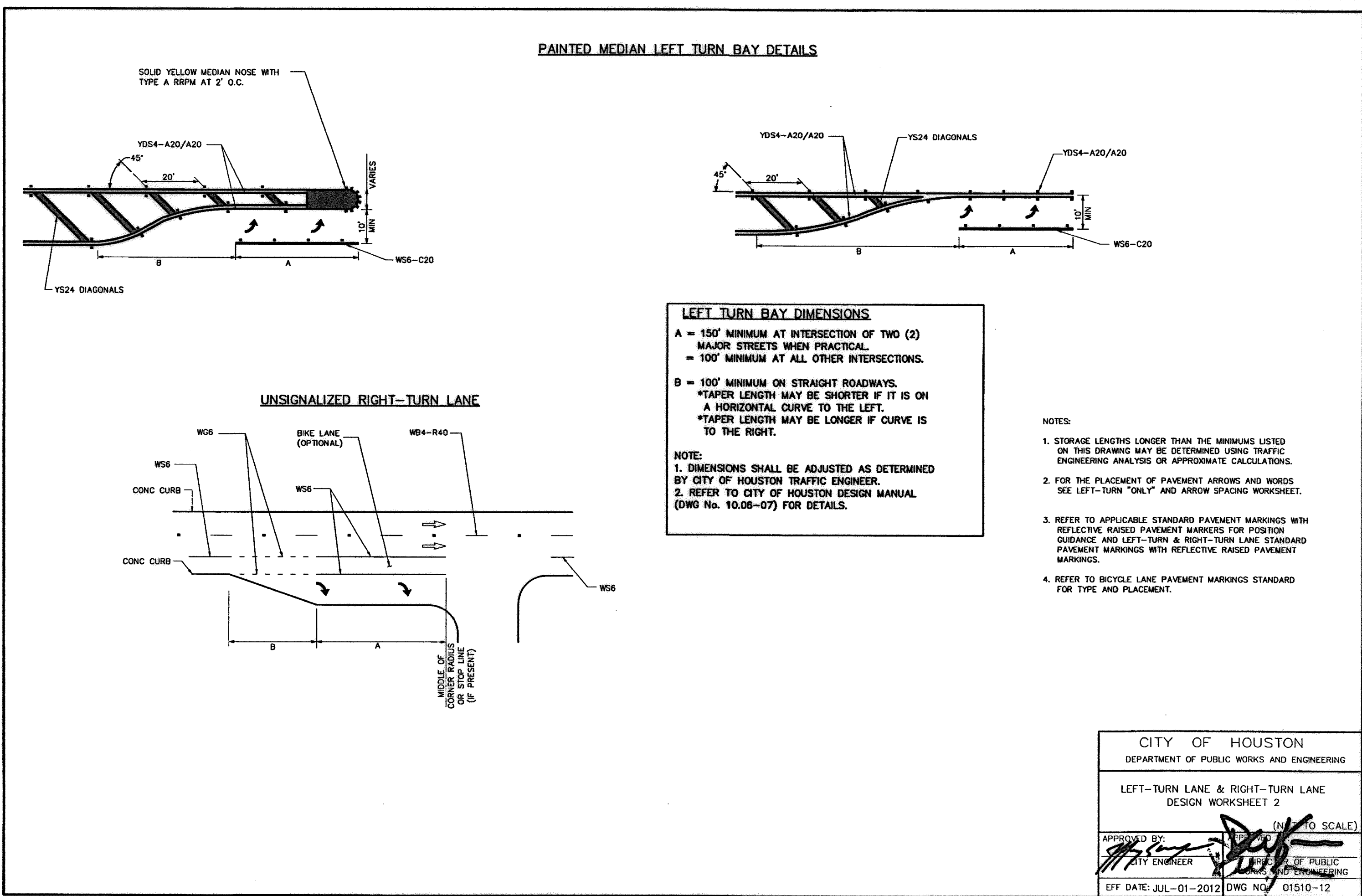
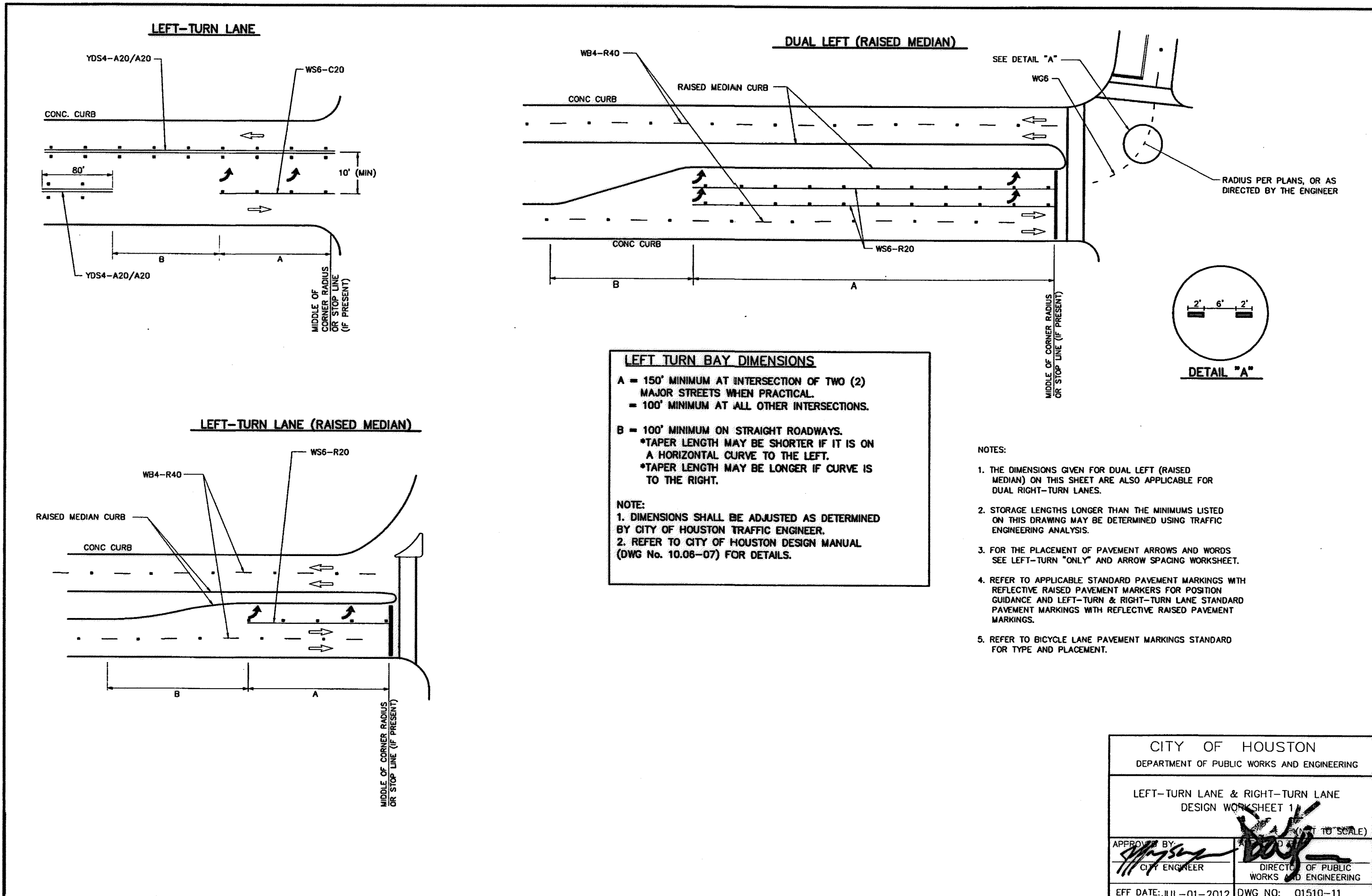
FILE NO.:

DRAWING SCALE: CITY DWG NO.

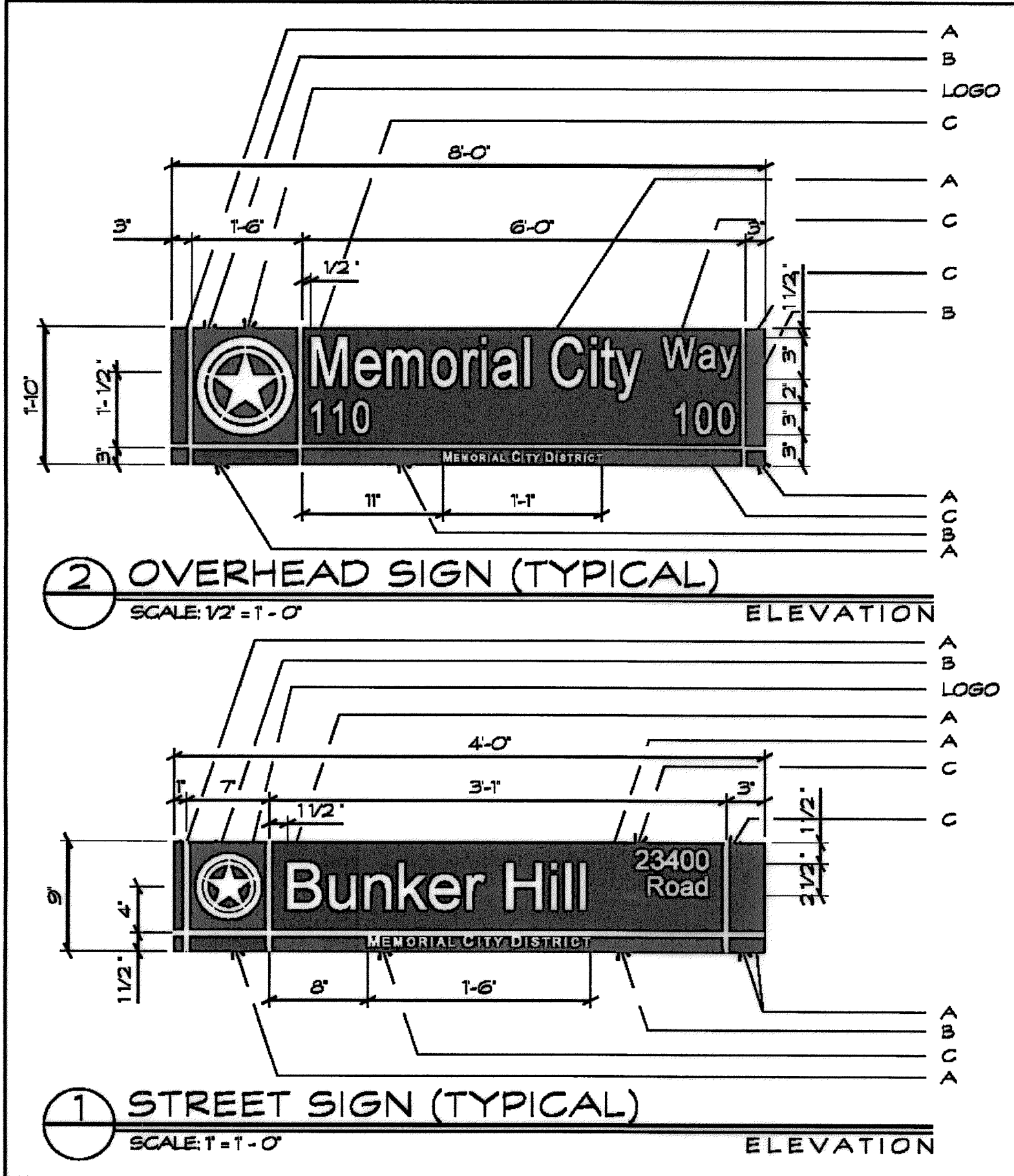
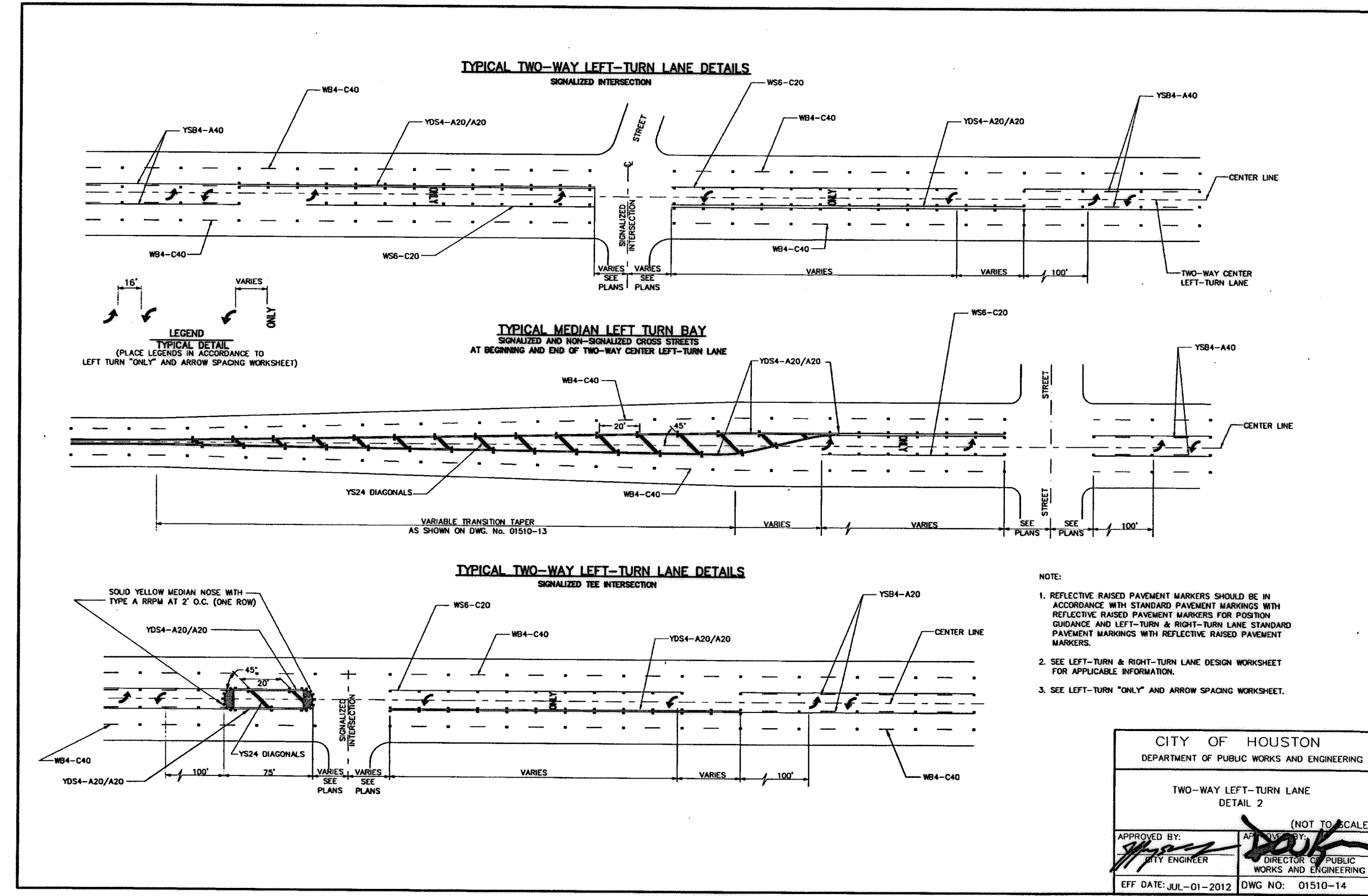
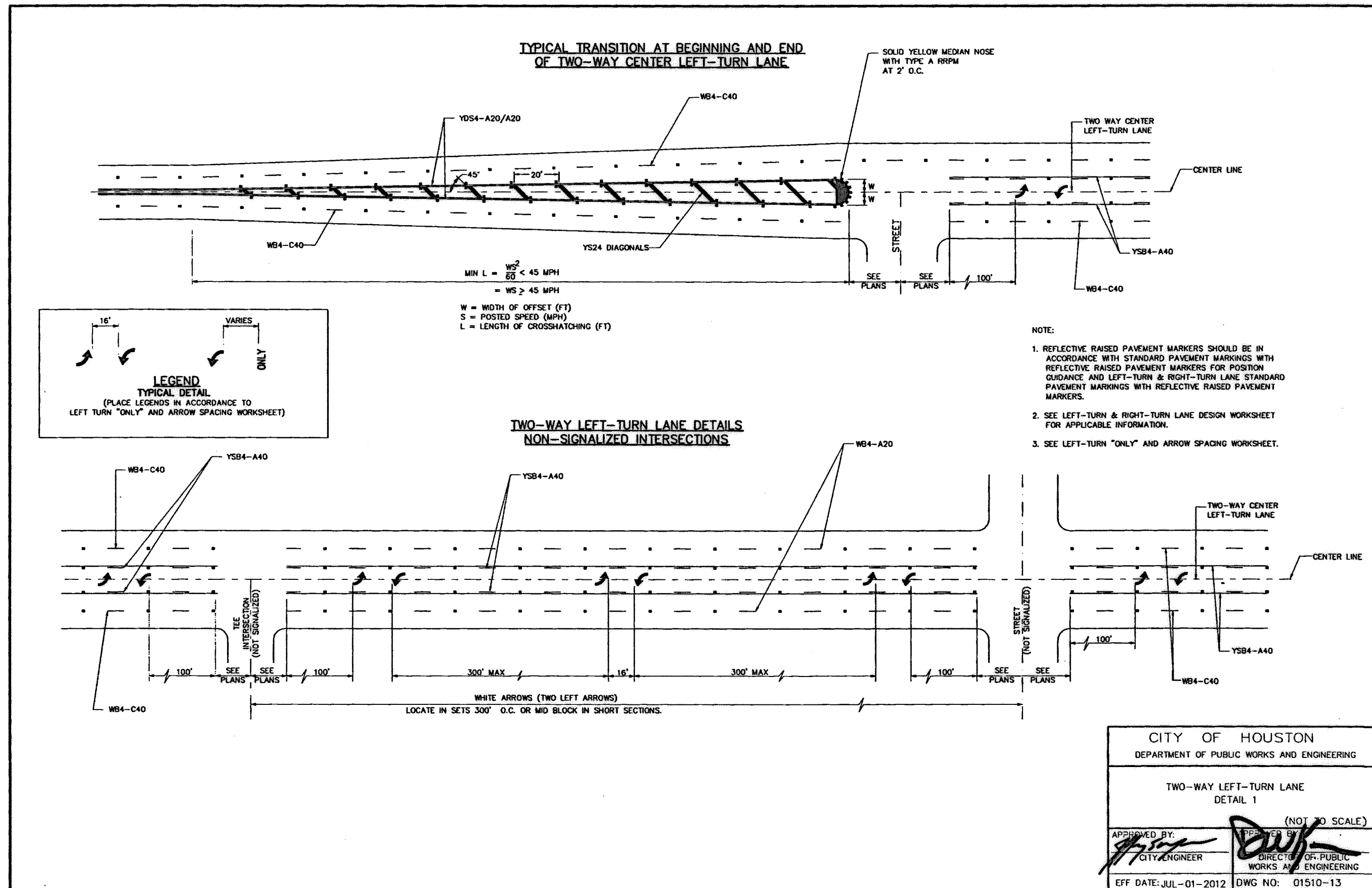
NOT TO SCALE

SHEET: 149 OF 226

APP. REVISIONS DATE No. M:\JGuthrie pww\ledpw\_ledco\_intr\_projects\Documents\Projects\130-10384-001\4-0-Producton\4-01-Drawings\Standards\Signing and Pavement Marking\City\PR08Standards.dwg 9/8/13 36 AM



 Lockwood, Andrews & Newnam, Inc. Firm No. 2614										
<b>MEMORIAL CITY REDEVELOPMENT AUTHORITY</b>										
<b>Lockwood, Andrews &amp; Newnam, Inc.</b> A LEO A DALY COMPANY										
<b>LUMPKIN ROAD N-T17000-0012-3 SIGNING AND PAVEMENT MARKING DETAILS (SHEET 4 OF 6)</b>										
<b>CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING</b>										
<table style="width: 100%;"> <tr> <td style="width: 33%;">WATER</td> <td style="width: 33%;">WASTEWATER</td> <td style="width: 33%;">TRAFFIC</td> </tr> <tr> <td>ST. &amp; BRIDGE</td> <td>STORMWATER</td> <td>SWD</td> </tr> </table>	WATER	WASTEWATER	TRAFFIC	ST. & BRIDGE	STORMWATER	SWD				
WATER	WASTEWATER	TRAFFIC								
ST. & BRIDGE	STORMWATER	SWD								
<table style="width: 100%;"> <tr> <td style="width: 80%;">FILE NO. :</td> <td style="width: 20%;">FACILITY</td> </tr> <tr> <td>DRAWING SCALE:</td> <td>CITY DWG NO.</td> </tr> <tr> <td>NOT TO SCALE</td> <td></td> </tr> <tr> <td>SHEET:</td> <td></td> </tr> <tr> <td>150 OF 226</td> <td></td> </tr> </table>	FILE NO. :	FACILITY	DRAWING SCALE:	CITY DWG NO.	NOT TO SCALE		SHEET:		150 OF 226	
FILE NO. :	FACILITY									
DRAWING SCALE:	CITY DWG NO.									
NOT TO SCALE										
SHEET:										
150 OF 226										



**COLOR KEY:**

(A) DARK BROWN - 3630-59  
(B) LIGHT RUST BROWN - 3630-109  
(C) WHITE - 3290

**NOTE:**  
1. OVERHEAD SIGNS TO BE FABRICATED FROM 1/8" ALUMINUM.  
2. OVERHEAD SIGNS TO BE MOUNTED TO WIRES OR TRAFFIC ARMS. TRAFFIC ARM MOUNTINGS TO USE 1" ASTRO SIGN-BRAC, BY PELCO, PER SIGN WIRE MOUNTS TO BE INSTALLED PER EXISTING DISTRICT STANDARDS.  
3. 3" HIGH INTENSITY REFLECTIVE PRISMATIC SHEETING APPLIED AS FIRST LAYER.  
4. STREET NAMES AND NUMBERS TO BE CUT OUT OF VINYL SHEETING OVERLAYED ONTO REFLECTIVE MATERIAL. REFER TO LAYOUT SHEETS FOR STREET NAMES & BLOCK NUMBERS.  
5. PAINT HEAD OF SCREW SAME COLOR.

**COLOR KEY:**  
(A) - 3" SCOTCHCAL TRANSLUCENT GRAPHIC FILM, COLOR TO BE PROVIDED  
(B) - 3" SCOTCHCAL TRANSLUCENT GRAPHIC FILM, COLOR TO BE PROVIDED  
(C) - 3" SCOTCHCAL TRANSLUCENT GRAPHIC FILM, COLOR TO BE PROVIDED  
(D) - LOGO IS A DIGITAL PRINT; FILE TO BE PROVIDED; SEAL WITH UV SEALANT  
TYPESTYLE IS AVENIR 45 BOOK LIGHT; CONDENSE AS NEEDED

**NOTE:**  
1. STREET SIGNS TO BE FABRICATED FROM 1/8" ALUMINUM.  
2. STREET SIGNS TO BE MOUNTED TO 2" ROUND POLE. SEE SHEET 1/3 FOR CONNECTION METHOD AND INSTALLATION SPECIFICATIONS.  
3. 3" HIGH INTENSITY REFLECTIVE PRISMATIC SHEETING APPLIED AS FIRST LAYER.  
4. STREET NAMES AND NUMBERS TO BE CUT OUT OF VINYL SHEETING OVERLAYED ONTO REFLECTIVE MATERIAL. REFER TO LAYOUT SHEETS FOR STREET NAMES & BLOCK NUMBERS

Memorial City District Street Signage Package	
DATE	REVISIONS
11/03/08 BLUE PLAN PRG200	
No.	DATE

**LAW KUDIELA ARCHITECTURE**  
LANDSCAPE ARCHITECTURE  
SITE PLANNING  
URBAN DESIGN

1108 OLD RUBY ROAD  
SUITE 270  
HOUSTON, TEXAS 77058  
713-865-8807  
WWW.LAWKUDIELA.COM

PROJECT NUMBER  
10270

SCALE  
as indicated

SHEET TITLE  
LANDSCAPE DETAILS

SHEET NUMBER  
1-01

9/12/14

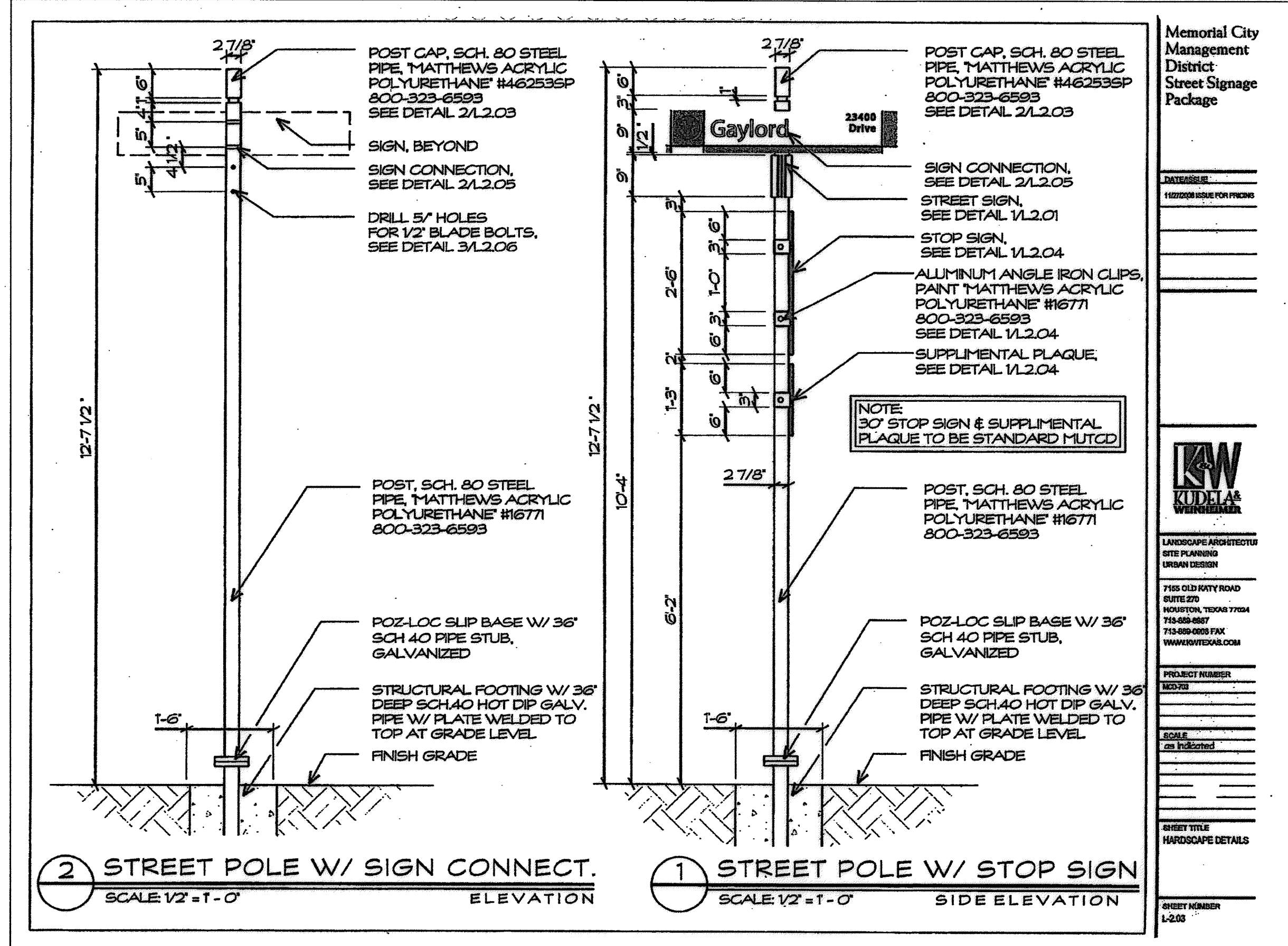
THOMAS D. DUNCAN P.E.  
98353  
LOCKWOOD, ANDREWS & NEWMAM, INC.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**LAN Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

**LUMPKIN ROAD N-T17000-0012-3**  
SIGNING AND PAVEMENT MARKING DETAILS  
(SHEET 5 OF 6)

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
NOT TO SCALE		
SHEET:		
151 OF 226		



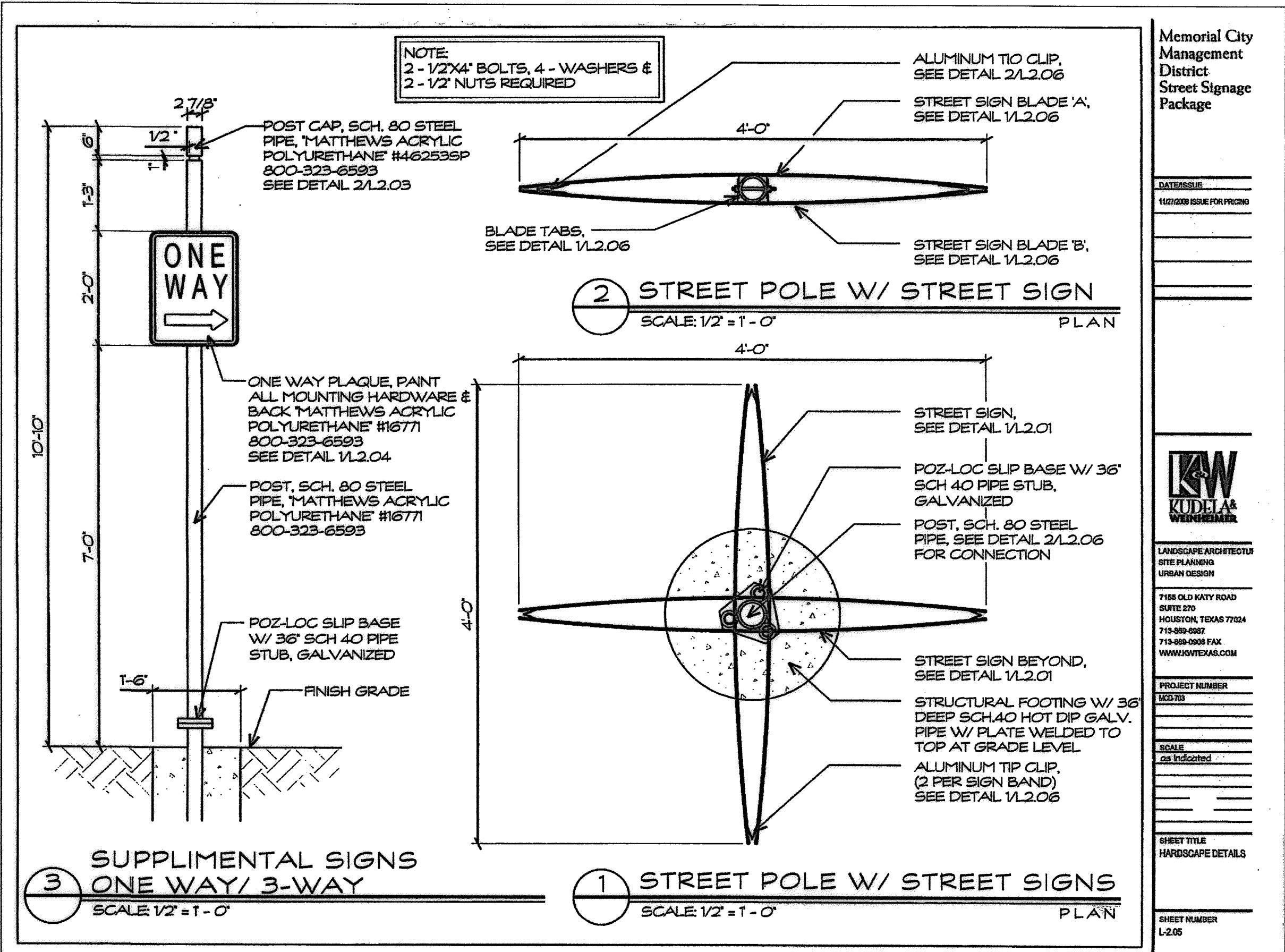
**Memorial City Management District Street Signage Package**

**KW KUDDELA WENDELL**

LANDSCAPE ARCHITECTS  
SITE PLANNING  
URBAN DESIGN

7105 OLD KATY ROAD  
SUITE 210  
HOUSTON, TEXAS 77054  
713-869-8867  
713-869-8868 FAX  
WWW.MCVTEXAS.COM

PROJECT NUMBER: 12203  
SCALE: As Indicated  
SHEET TITLE: HARDSCAPE DETAILS  
SHEET NUMBER: 1-206



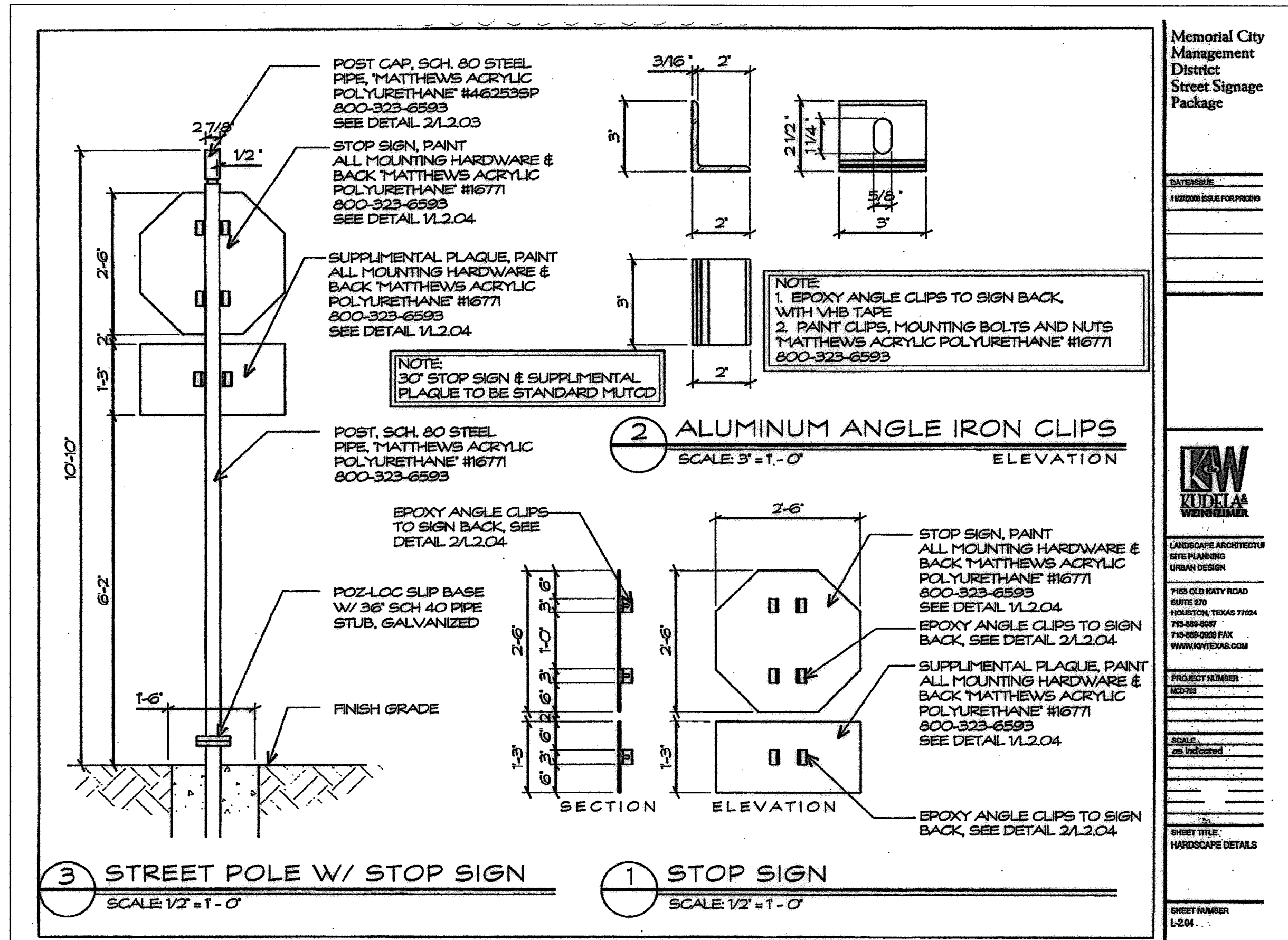
**Memorial City Management District Street Signage Package**

**KW KUDDELA WENDELL**

LANDSCAPE ARCHITECTS  
SITE PLANNING  
URBAN DESIGN

7105 OLD KATY ROAD  
SUITE 210  
HOUSTON, TEXAS 77054  
713-869-8867  
713-869-8868 FAX  
WWW.MCVTEXAS.COM

PROJECT NUMBER: 12203  
SCALE: As Indicated  
SHEET TITLE: HARDSCAPE DETAILS  
SHEET NUMBER: 1-206



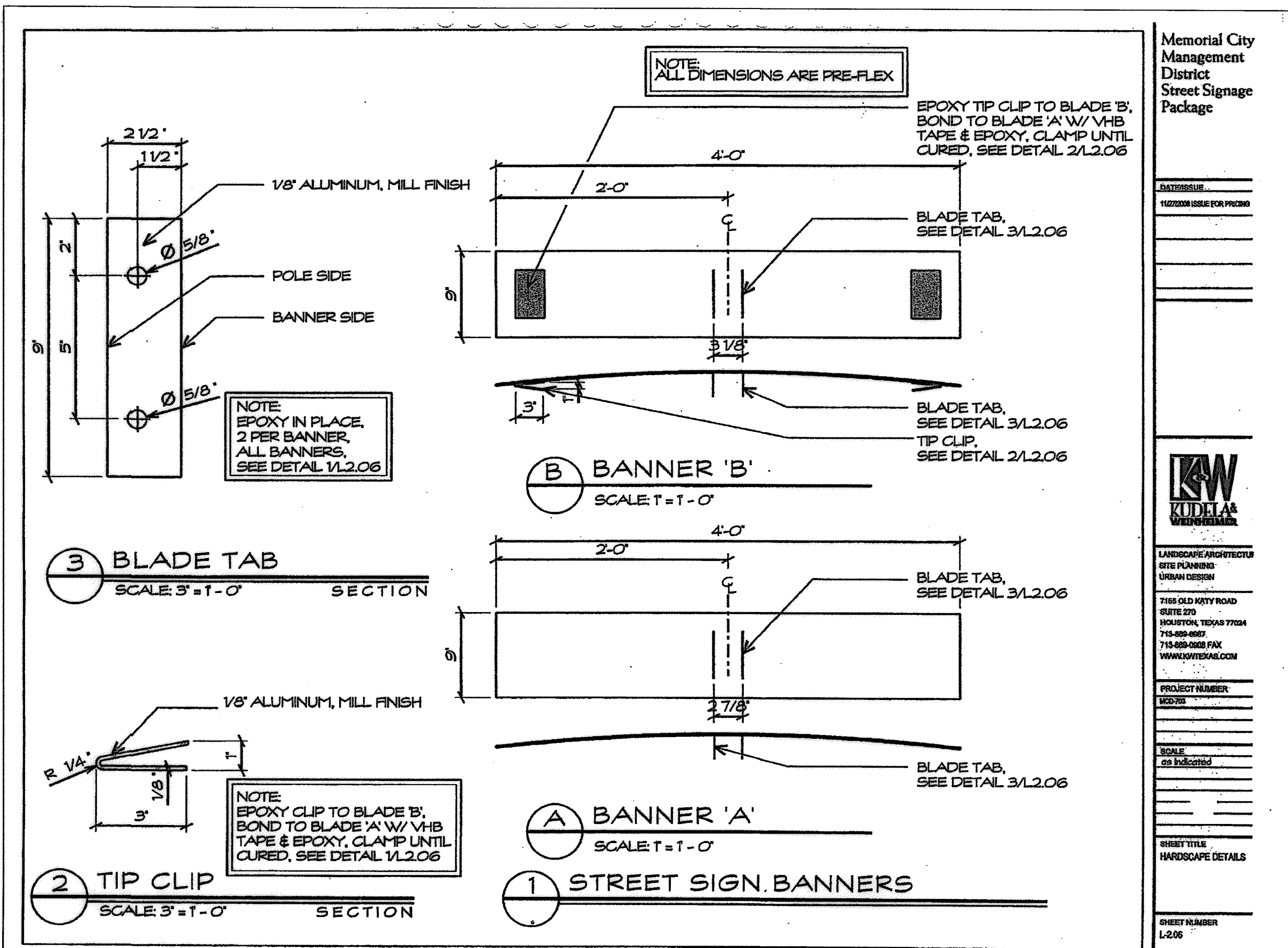
**Memorial City Management District Street Signage Package**

**KW KUDDELA WENDELL**

LANDSCAPE ARCHITECTS  
SITE PLANNING  
URBAN DESIGN

7105 OLD KATY ROAD  
SUITE 210  
HOUSTON, TEXAS 77054  
713-869-8867  
713-869-8868 FAX  
WWW.MCVTEXAS.COM

PROJECT NUMBER: 12203  
SCALE: As Indicated  
SHEET TITLE: HARDSCAPE DETAILS  
SHEET NUMBER: 1-206



**Memorial City Management District Street Signage Package**

**KW KUDDELA WENDELL**

LANDSCAPE ARCHITECTS  
SITE PLANNING  
URBAN DESIGN

7105 OLD KATY ROAD  
SUITE 210  
HOUSTON, TEXAS 77054  
713-869-8867  
713-869-8868 FAX  
WWW.MCVTEXAS.COM

PROJECT NUMBER: 12203  
SCALE: As Indicated  
SHEET TITLE: HARDSCAPE DETAILS  
SHEET NUMBER: 1-206

**STATE OF TEXAS**  
9/12/14  
**THOMAS D. DUNCAN P.E.**  
98353  
LICENSED PROFESSIONAL ENGINEER

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
SIGNING AND PAVEMENT MARKING DETAILS  
(SHEET 6 OF 6)

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

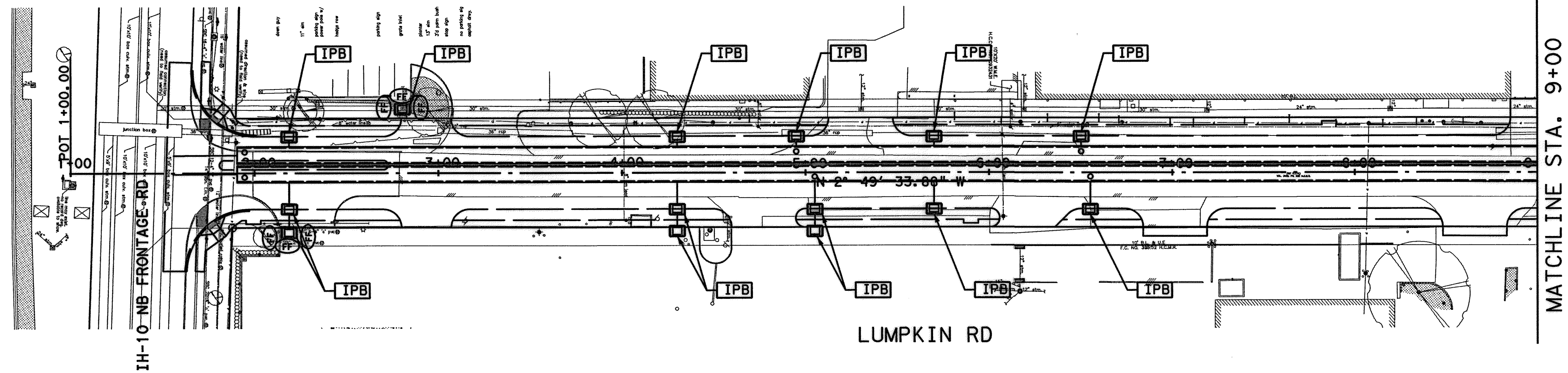
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SW

FILE NO.:  
DRAWING SCALE:  
NOT TO SCALE  
SHEET: 152 OF 226

FACILITY: CITY DWG NO.

APP. REVISIONS DATE No. M:Guthrie  
 pw \\ ldpw. lddo. int. projects\se\Documents\Projects\130-10384-001\4-0-Product\en\4-01-Drawings\Standards\Signing and Pavement Marking\09\H.P\26standards.dwg@4:37 AM



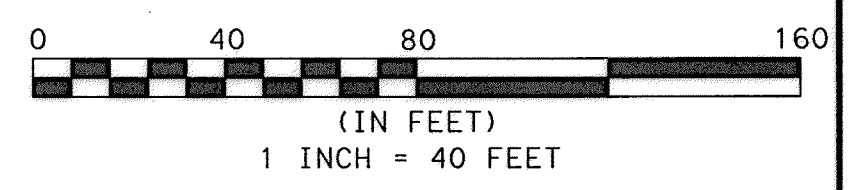
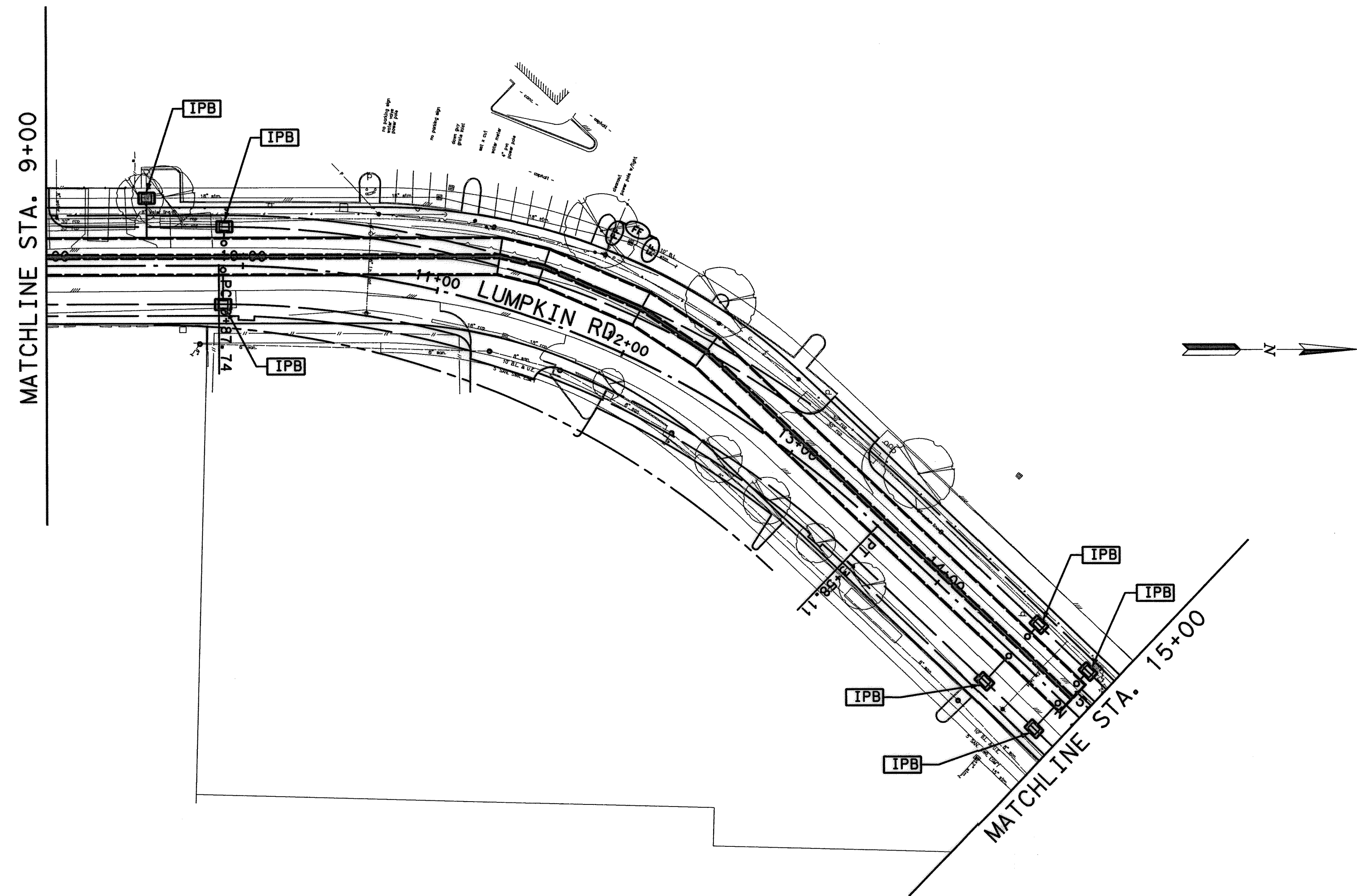


**LEGEND**

- INLET PROTECTION BARRIER
- FILTER FABRIC FENCE
- REINFORCED FILTER FABRIC FENCE
- HAY BALE FENCE

**NOTES:**

1. ALL INLET PROTECTION SHOULD INCLUDE:  
PROPOSED INLETS - STAGE  
A (SILT FENCE) AND STAGE 2 (GRAVEL BAG).  
EXISTING INLETS - STAGE  
B (GRAVEL BAGS) ONLY.
2. CONTRACTOR SHALL UTILIZE INLET PROTECTION BARRIERS ON ALL INLETS, MANHOLES, AND PIPE STUBS DURING CONSTRUCTION OF STORM SEWER.
3. UPON COMPLETION OF ROADWAY PAVEMENT, SAND BAGS SHALL BE PLACED AT PROPOSED INLETS.
4. CONTRACTOR SHALL REFER TO SPECIFICATION SECTION 01575 FOR INFORMATION REGARDING STABILIZED CONSTRUCTION EXITS.
5. GRATE INLETS LOCATED IN TEMPORARY ASPHALT TRAVEL LANES TO BE PROTECTED BY FILTER FABRIC FENCING PLACED AROUND THE NEARBY CONSTRUCTION ZONE.



Brian R. Whitney, P.E.  
 Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

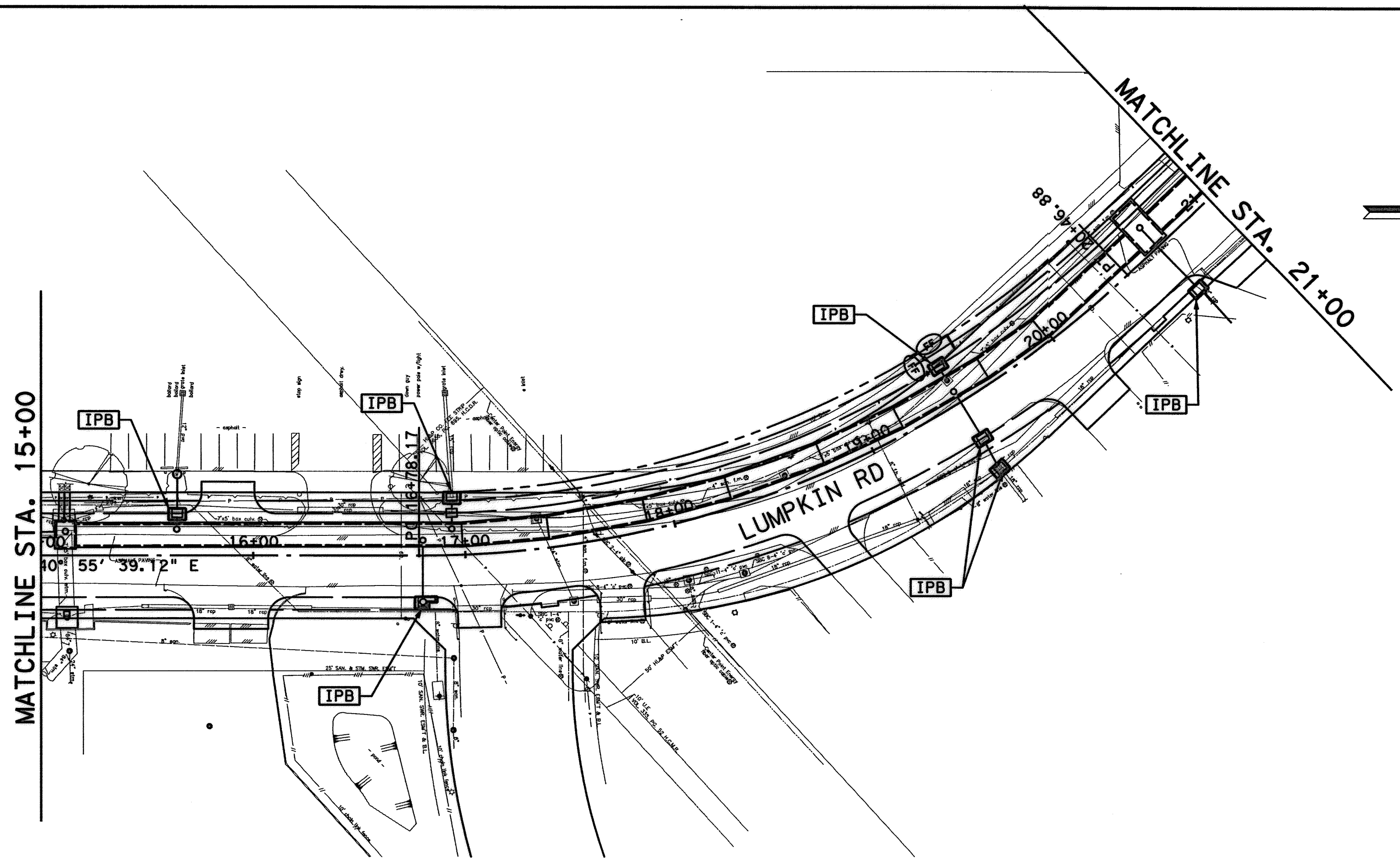
**LUMPKIN ROAD**  
 N-T17000-0012-3  
**STORM WATER POLLUTION PREVENTION PLAN**  
 SHEET 1 OF 4

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING





WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
HORZ: 1"=40'	
SHEET:	
153 OF 226	

9/3/2014 11:19:02 AM pw \\ ledpw.ledco.int\projectwise\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawing\SWGP\142-001-SW3P-01

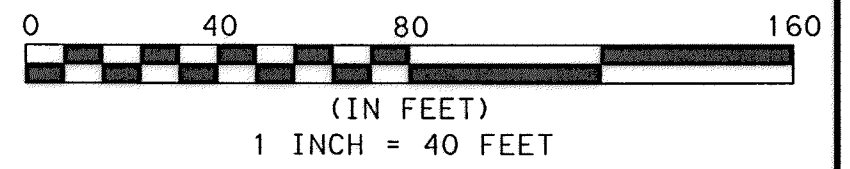
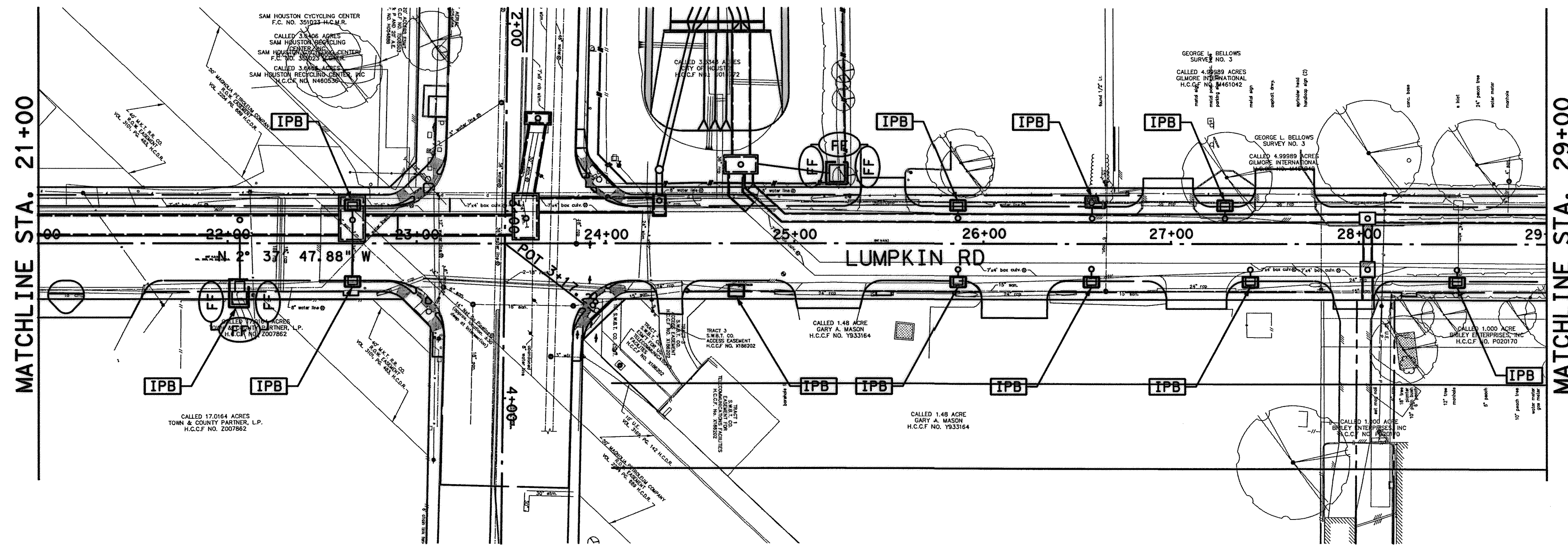


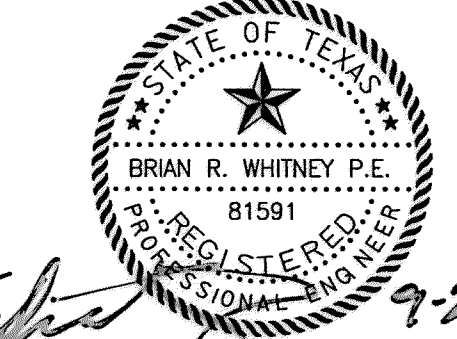
**LEGEND**

-  INLET PROTECTION BARRIER
-  FILTER FABRIC FENCE
-  REINFORCED FILTER FABRIC FENCE
-  HAY BALE FENCE


**NOTES:**

1. ALL INLET PROTECTION SHOULD INCLUDE:  
 PROPOSED INLETS - STAGE  
 A (SILT FENCE) AND STAGE 2 (GRAVEL BAG).  
 EXISTING INLETS - STAGE  
 B (GRAVEL BAGS) ONLY.
2. CONTRACTOR SHALL UTILIZE INLET PROTECTION BARRIERS ON ALL INLETS, MANHOLES, AND PIPE STUBS DURING CONSTRUCTION OF STORM SEWER.
3. UPON COMPLETION OF ROADWAY PAVEMENT, SAND BAGS SHALL BE PLACED AT PROPOSED INLETS.
4. CONTRACTOR SHALL REFER TO SPECIFICATION SECTION 01575 FOR INFORMATION REGARDING STABILIZED CONSTRUCTION EXITS.
5. GRATE INLETS LOCATED IN TEMPORARY ASPHALT TRAVEL LANES TO BE PROTECTED BY FILTER FABRIC FENCING PLACED AROUND THE NEARBY CONSTRUCTION ZONE.



  
 Brian R. Whitney  
 Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

 **Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

**LUMPKIN ROAD**  
**N-T17000-0012-3**  
**STORM WATER POLLUTION PREVENTION PLAN**

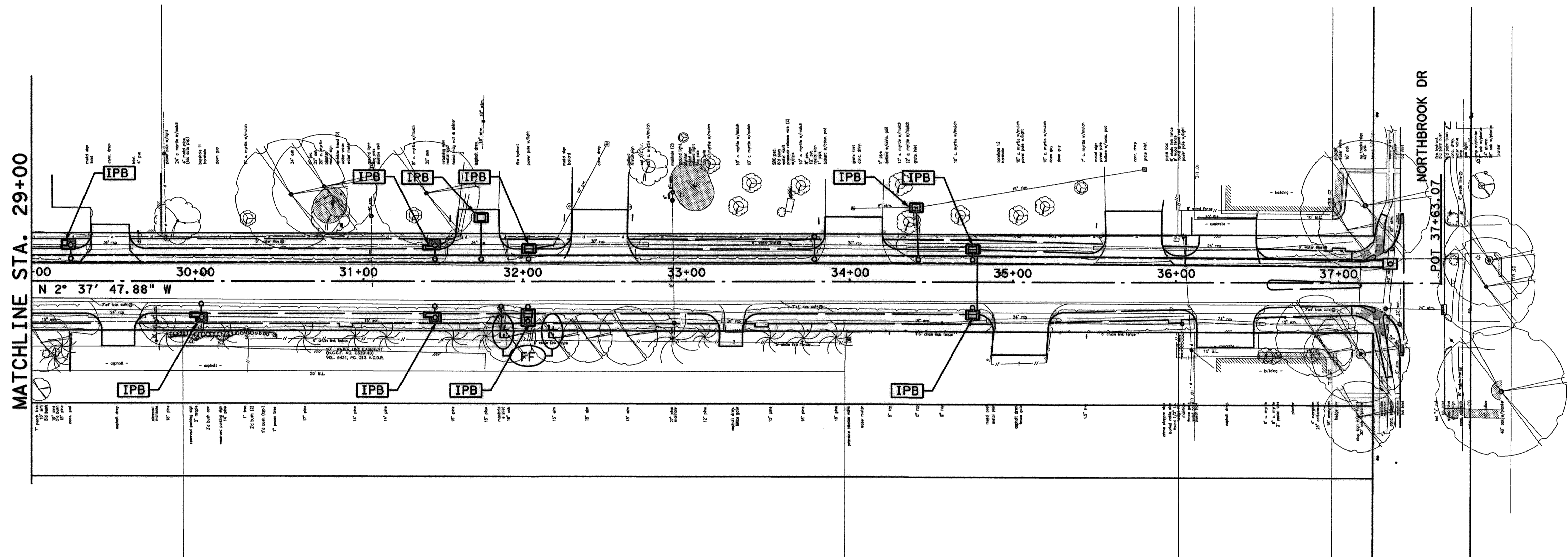
SHEET 2 OF 4

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
HORZ: 1" = 40'	
SHEET: 154 OF 226	

9/3/2014 11:19:11 AM M:\Guthrie 9/3/2014 11:19:11 AM p:\ladpw\_ladco\_intl\projectwise\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\SWSP\143-001-SWSP-02.dgn



**LEGEND**

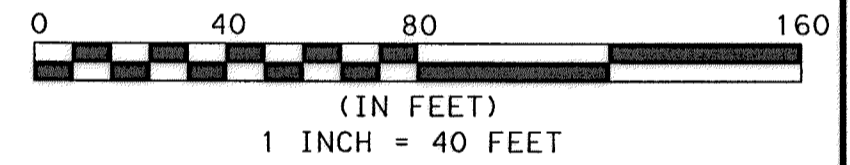
- IPB INLET PROTECTION BARRIER
- FF FILTER FABRIC FENCE
- R REINFORCED FILTER FABRIC FENCE
- HBF HAY BALE FENCE

**NOTES:**

1. ALL INLET PROTECTION SHOULD INCLUDE:  
 PROPOSED INLETS - STAGE  
 A (SILT FENCE) AND STAGE 2 (GRAVEL BAG).  
 EXISTING INLETS - STAGE  
 B (GRAVEL BAGS) ONLY.
2. CONTRACTOR SHALL UTILIZE INLET PROTECTION BARRIERS ON ALL INLETS, MANHOLES, AND PIPE STUBS DURING CONSTRUCTION OF STORM SEWER.
3. UPON COMPLETION OF ROADWAY PAVEMENT, SAND BAGS SHALL BE PLACED AT PROPOSED INLETS.
4. CONTRACTOR SHALL REFER TO SPECIFICATION SECTION 01575 FOR INFORMATION REGARDING STABILIZED CONSTRUCTION EXITS.
5. GRATE INLETS LOCATED IN TEMPORARY ASPHALT TRAVEL LANES TO BE PROTECTED BY FILTER FABRIC FENCING PLACED AROUND THE NEARBY CONSTRUCTION ZONE.

MATCHLINE STA. 29+00

NORTHBROOK DR  
POT 37+63.07



**Brian R. Whitney P.E.**  
 81591  
 REGISTERED PROFESSIONAL ENGINEER  
 9-22-14  
 Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

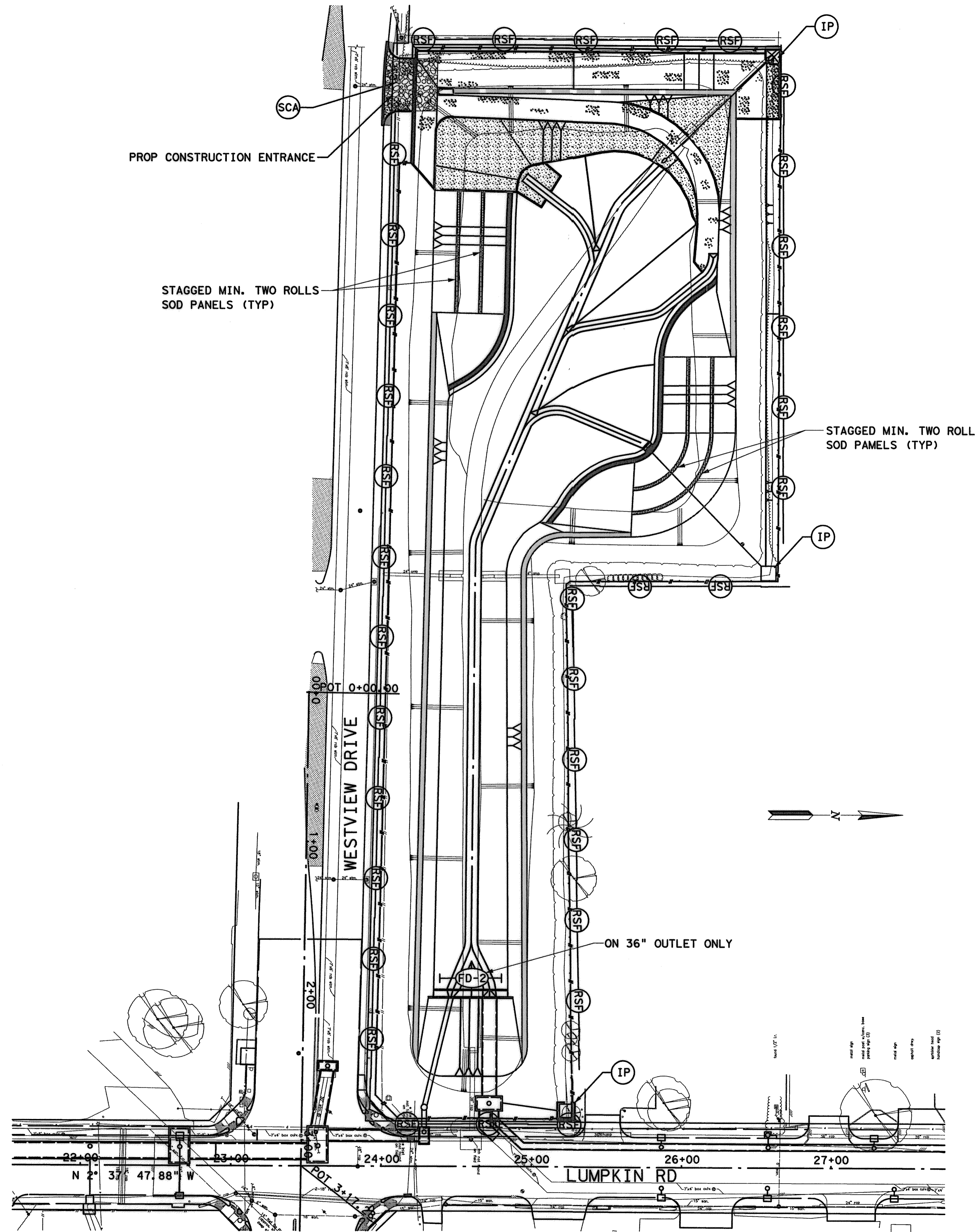
**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

**LUMPKIN ROAD  
 N-T17000-0012-3  
 STORM WATER POLLUTION PREVENTION PLAN**

SHEET 3 OF 4

<b>CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING</b>		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG NO.
HORZ: 1"=40'		
SHEET: 155 OF 226		

9/3/2014 11:19:20 AM MUGuthrie p:\l\adpw\_ladco\_int\projectwise\Documents\Projects\138-10384-001\4-0-Product\1on\4-01-Drawings\SW3P-143-001-SW3P-03.dgn

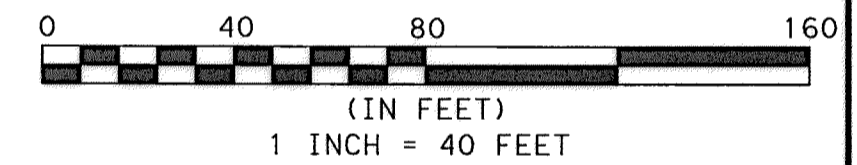


**LEGEND**

- FF — FILTER FABRIC FENCE
- RSF — REINFORCED FILTER FABRIC FENCE
- FD-2 — ROCK FILTER DAM
- IP — INLET PROTECTION BARRIER
- SCA — STABILIZED CONST. ACCESS

**NOTES:**

1. CONTRACTOR TO REFER TO HCFCD STORMWATER POLLUTION PREVENTION DETAILS FOR BASIN ONLY
2. ALL INLET PROTECTION SHOULD INCLUDE:  
 A (SILT FENCE) AND STAGE 2 (GRAVEL BAG).  
 EXISTING INLETS - STAGE  
 B (GRAVEL BAGS) ONLY.
3. CONTRACTOR SHALL UTILIZE INLET PROTECTION BARRIERS ON ALL INLETS, MANHOLES, AND PIPE STUBS DURING CONSTRUCTION OF STORM SEWER.



Brian R. Whitney  
 Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

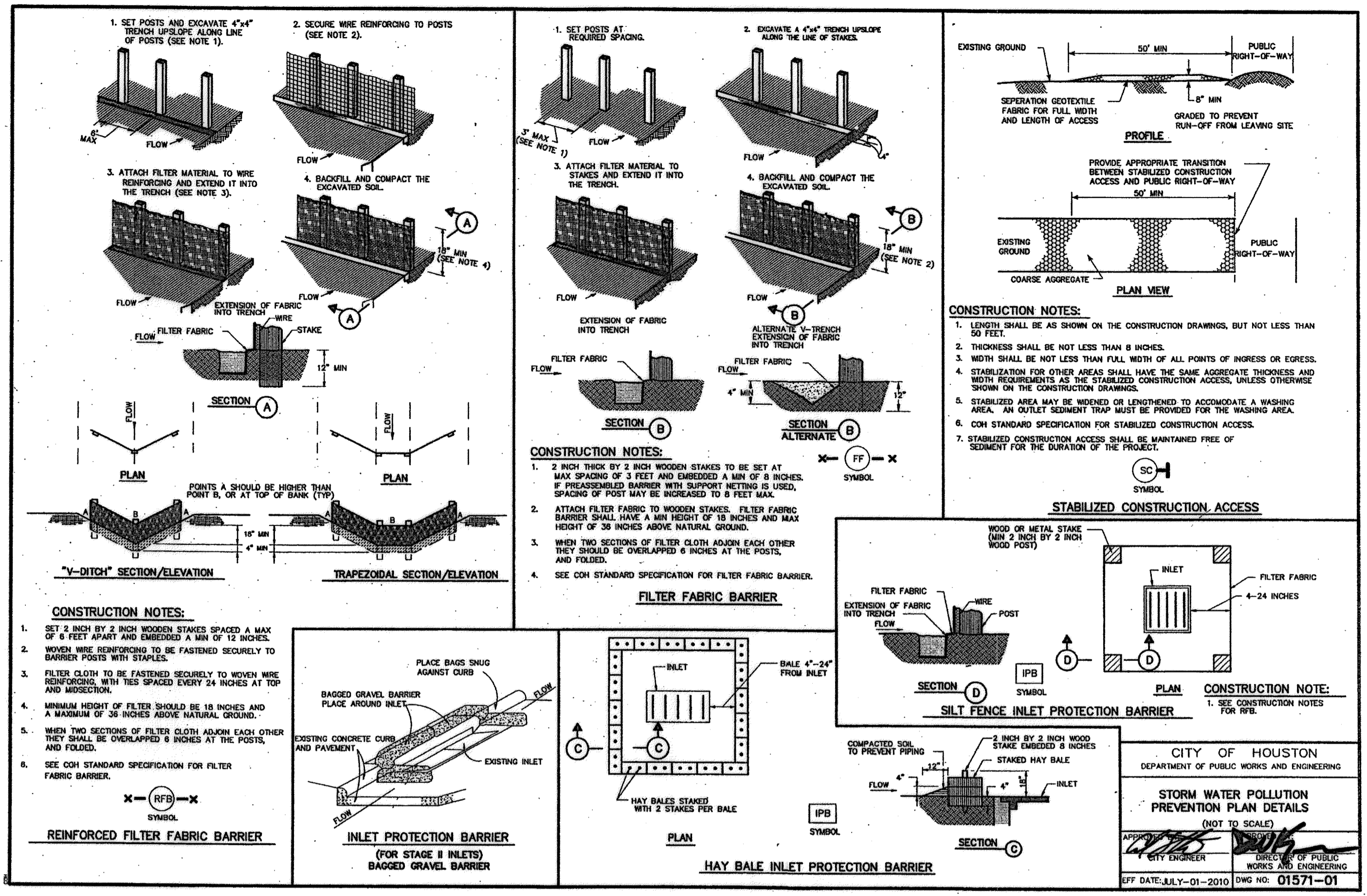
**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

**LUMPKIN ROAD**  
**N-T17000-0012-3**  
**STORM WATER POLLUTION**  
**PREVENTION PLAN**  
 SHEET 4 OF 4

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO. 1	FACILITY
DRAWING SCALE:	CITY DWG NO.
HORZ: 1"=40'	
SHEET:	
156 OF 226	



CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

**STORM WATER POLLUTION PREVENTION PLAN DETAILS**  
(NOT TO SCALE)

APPROVED: [Signature]  
CITY ENGINEER

APPROVED: [Signature]  
DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JULY-01-2010 DWG NO: 01571-01

9-15-2014

Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**  
  
**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY  
 LUMPKIN ROAD  
 N-T17000-0012-3  
**STORM WATER POLLUTION PREVENTION PLAN DETAILS**  
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

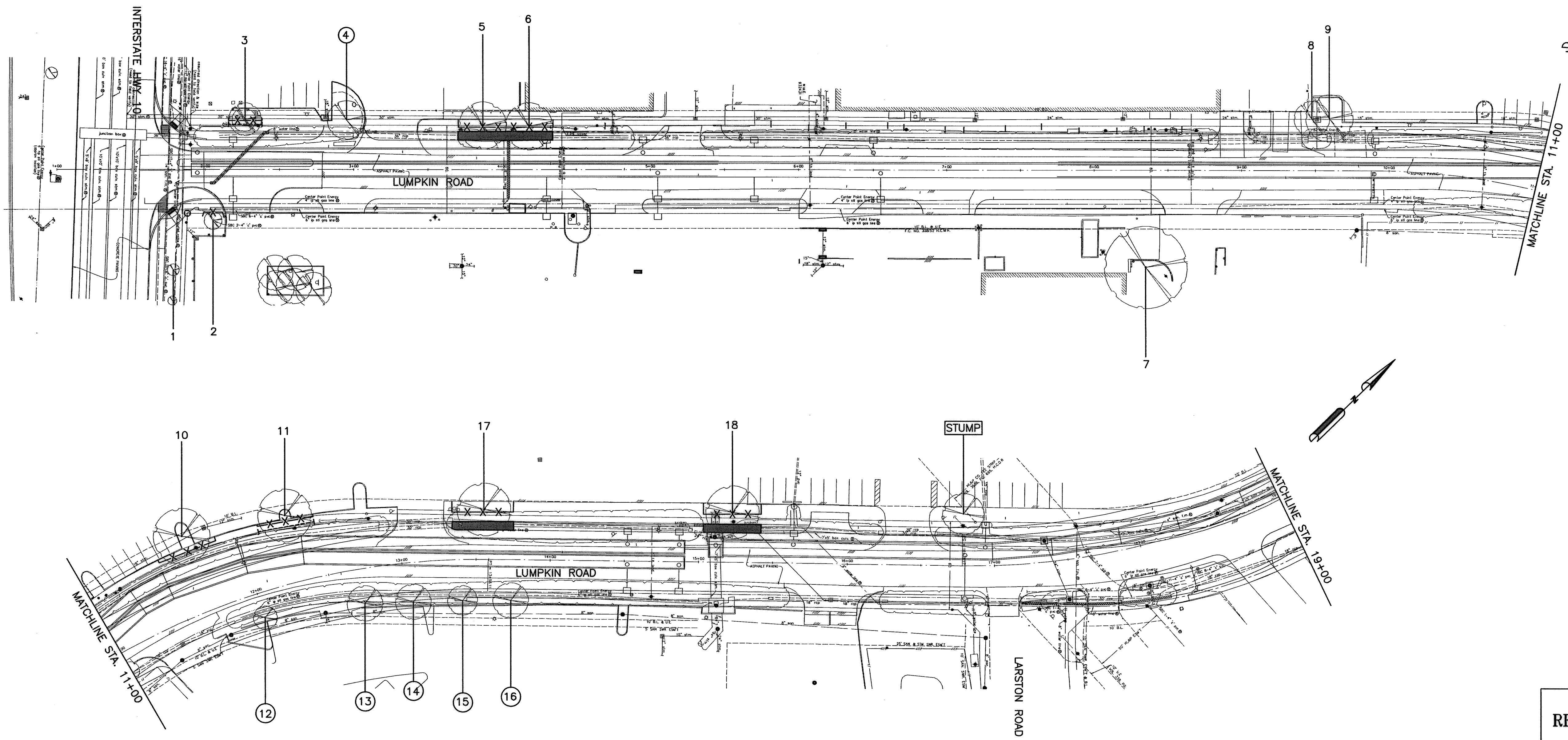
FILE NO. 1

DRAWING SCALE: NOT TO SCALE

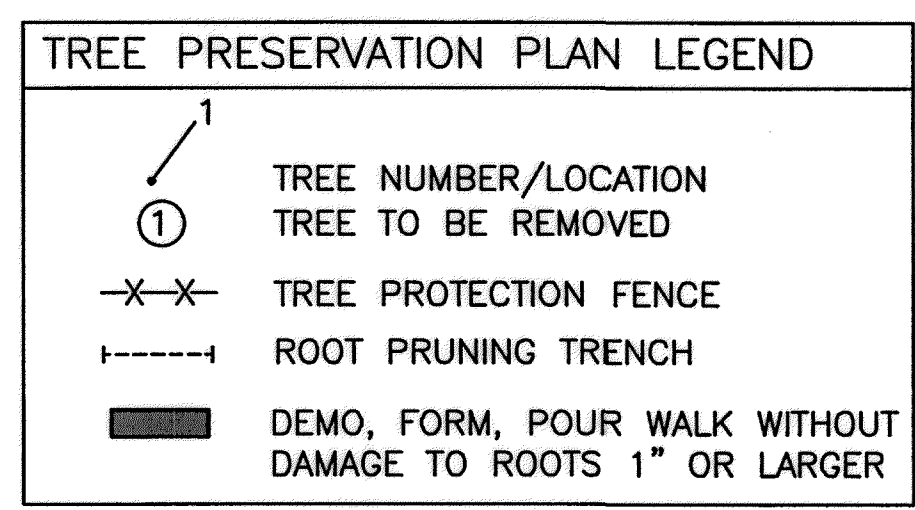
SHEET: 157 OF 226

FACILITY

CITY DWG NO.

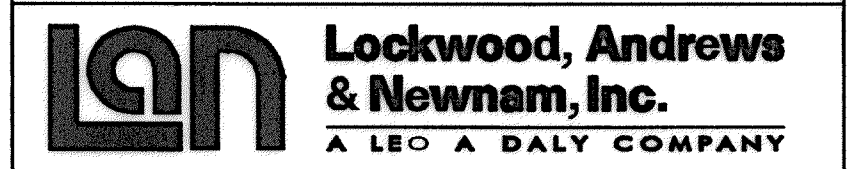


Tree No.	Description	Comments	Treatment
1	5" Sy camore	Private tree, will not be impacted	
2	5" Sy camore	Top broken at guy wire from planting, Poor, Private tree, will not be impacted	Fence
3	6" Lacebark Elm	Private tree	Root prune for waterline, Fence, Clearance prune
4	8" Lacebark Elm	Topped by utility, Private tree, remove for new HCCS driveway	Private tree, Poor condition, Remove tree, No replacement required
5	12" Lacebark Elm	Topped by utility, Private tree	Form&Pour sidewalk without damage to tree roots 1" diameter or larger, Fence, Bore water line, Clearance prune
6	11" Lacebark Elm	Leaning, Topped by utility, Private tree	Form&Pour sidewalk without damage to tree roots 1" diameter or larger, Fence, Bore water line, Clearance prune
7	15" Crepe Myrtle	Private tree, will not be impacted	
8	6" Crepe Myrtle	Topped, Private, will not be impacted	
9	6" Crepe Myrtle	Topped, Private, will not be impacted	
10	14" Live Oak	Utility pruned, Private tree	Root prune for storm, Fence, Clearance prune
11	13" Live Oak	Utility pruned, Private tree	Root prune for storm, Fence, Clearance prune
12	9" Cedar Elm	Dead, Remove for sidewalk	Remove tree, No replacement required
13	9" Cedar Elm	Remove for sidewalk	Remove tree, Provide 9" replacement
14	8" Cedar Elm	Remove for sidewalk	Remove tree, Provide 8" replacement
15	10" Cedar Elm	Ordinance tree, Remove for new street & walk	Remove tree, Provide 10" in replacement planting
16	11" Cedar Elm	Ordinance tree, Remove for new street & walk	Remove tree, Provide 11" in replacement planting
17	14" Live Oak	Utility pruned, Private tree	Form&Pour sidewalk without damage to tree roots 1" diameter or larger, Fence, Bore water line, Clearance prune
18	13" Live Oak	Utility pruned, Private tree	Form&Pour sidewalk without damage to tree roots 1" diameter or larger, Fence, Clearance prune



**NOTE:**  
 THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED JULY 2014. THE PLAN CONSIDERS ALL FITTINGS, VERTICAL OFFSETS AND AREAS OF NECESSARY EXCAVATION. CHANGES MADE TO DESIGN MAY COMPROMISE THE TREE PROTECTION PLAN. REFER SPECIFICATIONS 01562 AND 02915. CONDITION OF EACH TREE IS BASED ON VISUAL EVALUATION AT TIME OF DESIGN. CONDITION AND STRUCTURAL INTEGRITY OF EACH TREE IS NOT GUARANTEED BY DESIGNER AT ANY POINT IN THE FUTURE, AS ENVIRONMENTAL AND MAINTENANCE INFLUENCES ON EACH TREE CAN NOT BE DETERMINED BY DESIGNER.

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**



210 Stone Bush Ct. • Katy, Texas 77493  
 281-391-0022 ckoehl@koehlurbanforestry.com

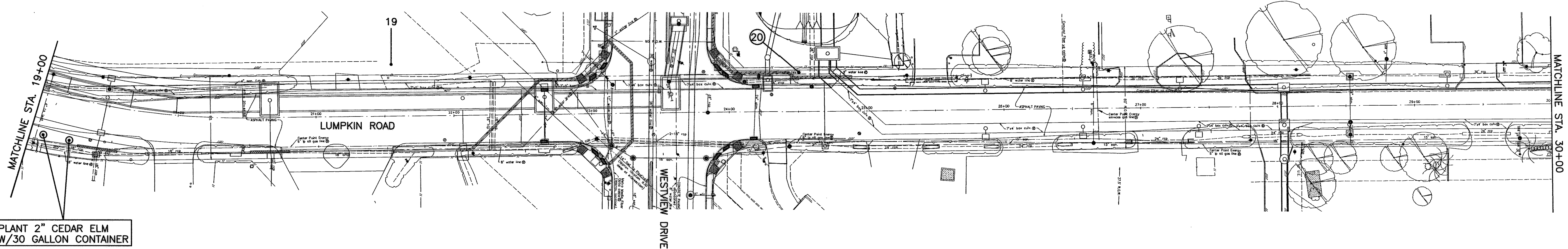
APPROVED: *Craig N. Koehl* 7-16-14

LUMPKIN ROAD  
 N-T17000-0012-3  
**TREE PROTECTION PLAN**  
 SHEET 1 OF 3

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SIW
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: HORIZ: 1"=40'		
SHEET: 158 OF 186		

REVISIONS  
 No. DATE  
 \$USERNAME\$  
 \$TIMES\$  
 \$DATE\$  
 \$FILES\$



PLANT 2" CEDAR ELM  
W/30 GALLON CONTAINER

Tree No.	Description	Comments	Treatment
19	22" Tallow	Private tree, will not be impacted	

**TREE PRESERVATION PLAN LEGEND**

- ① TREE NUMBER/LOCATION  
TREE TO BE REMOVED
- ⊙ REPLACEMENT TREES
- X-X- TREE PROTECTION FENCE
- - - - ROOT PRUNING TRENCH
- DEMO, FORM, POUR WALK WITHOUT  
DAMAGE TO ROOTS 1" OR LARGER

**NOTE:**  
THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED JULY 2014. THE PLAN CONSIDERS ALL FITTINGS, VERTICAL OFFSETS AND AREAS OF NECESSARY EXCAVATION. CHANGES MADE TO DESIGN MAY COMPROMISE THE TREE PROTECTION PLAN. REFER SPECIFICATIONS 01562 AND 02915. CONDITION OF EACH TREE IS BASED ON VISUAL EVALUATION AT TIME OF DESIGN. CONDITION AND STRUCTURAL INTEGRITY OF EACH TREE IS NOT GUARANTEED BY DESIGNER AT ANY POINT IN THE FUTURE, AS ENVIRONMENTAL AND MAINTENANCE INFLUENCES ON EACH TREE CAN NOT BE DETERMINED BY DESIGNER.

**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

**LAN Lockwood, Andrews  
& Newnam, Inc.**  
A LEO A DALY COMPANY

**C.N. Koehl**  
Urban Forestry, Inc.  
210 Stone Bush Ct. • Katy, Texas 77493  
281-391-0022 ckoehl@koehiurbanforestry.com  
APPROVED: *Craig N. Koehl* 7-16-14

LUMPKIN ROAD  
N-T17000-0012-3  
**TREE PROTECTION PLAN  
SHEET 2 OF 3**

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SIW
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: HORZ: 1"=40'		
SHEET: 159 OF 186		

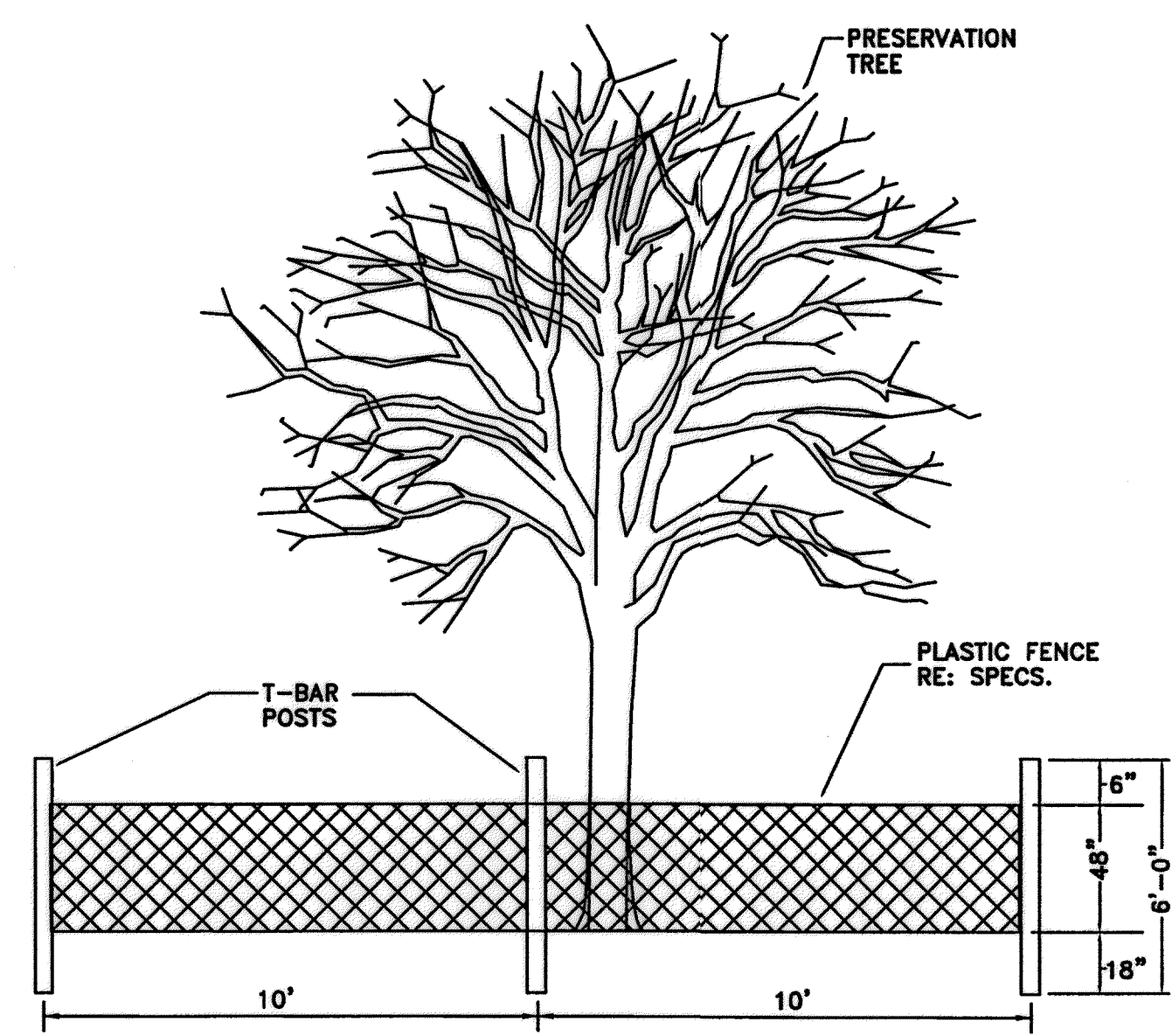
APP.	
REVISIONS	
DATE	
NO.	

\$USERNAMES \$TIME\$ \$DATES\$ \$FILE\$

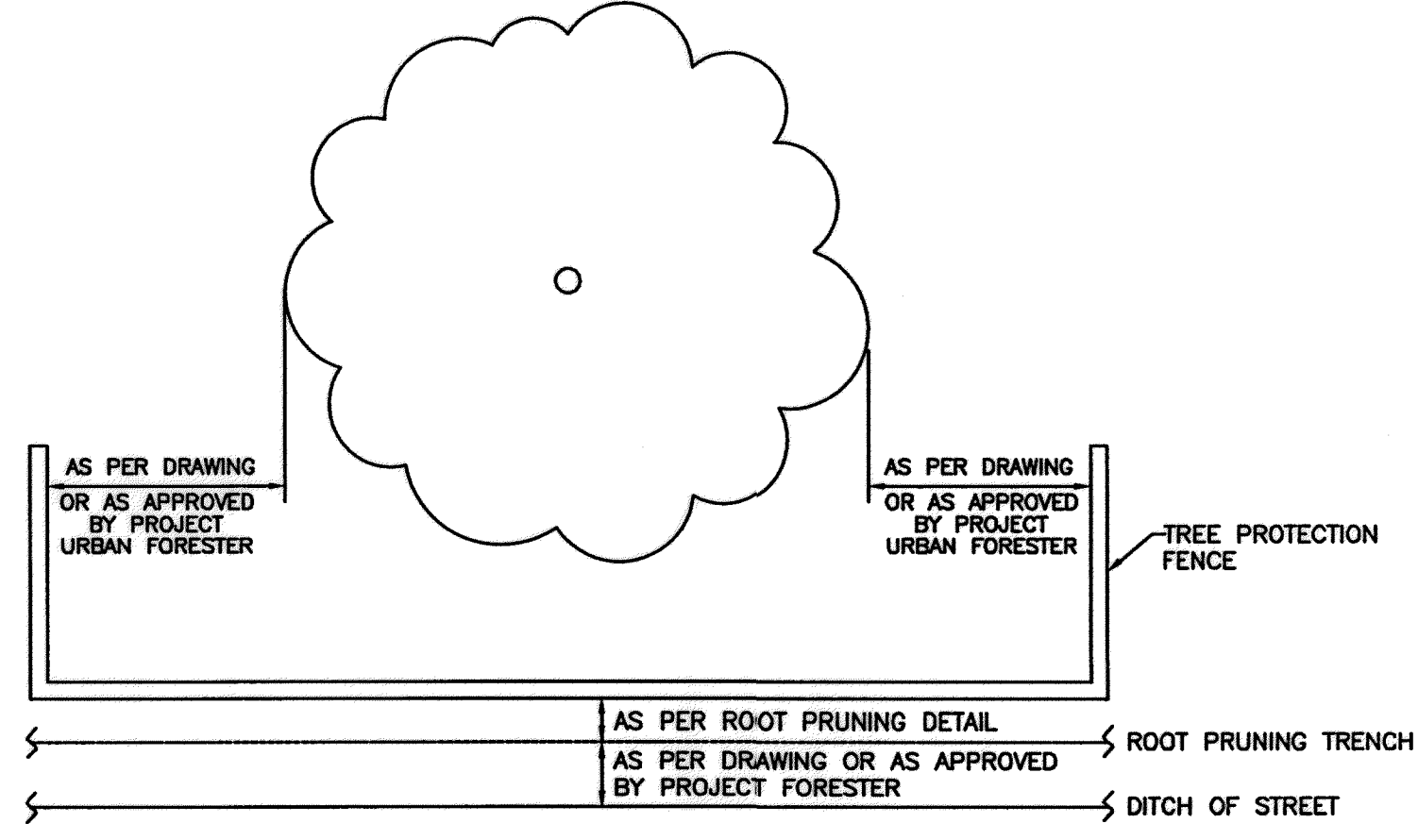
Tree Removal List			
Tree No.	Description	Comments	Replacement requirement
4	8" Lacebark Elm	Topped by utility, Private tree, remove for new HCCS driveway	0
12	9" Cedar Elm	Dead, Remove for sidewalk	0
13	9" Cedar Elm	Remove for sidewalk	9
14	8" Cedar Elm	Remove for sidewalk	8
15	10" Cedar Elm	Ordinance tree, Remove for new street & walk	10
16	11" Cedar Elm	Ordinance tree, Remove for new street & walk	11
<b>TOTAL REPLACEMENT INCHES REQUIRED</b>			<b>38</b>

Tree Replacement List			
Quantity	Caliper Size	Species	Container/Tree Spade size
Replacement planting included in Landscape Architecture Plans			
<b>TOTAL REPLACEMENT INCHES INCLUDED IN PLAN</b>			<b>0</b>

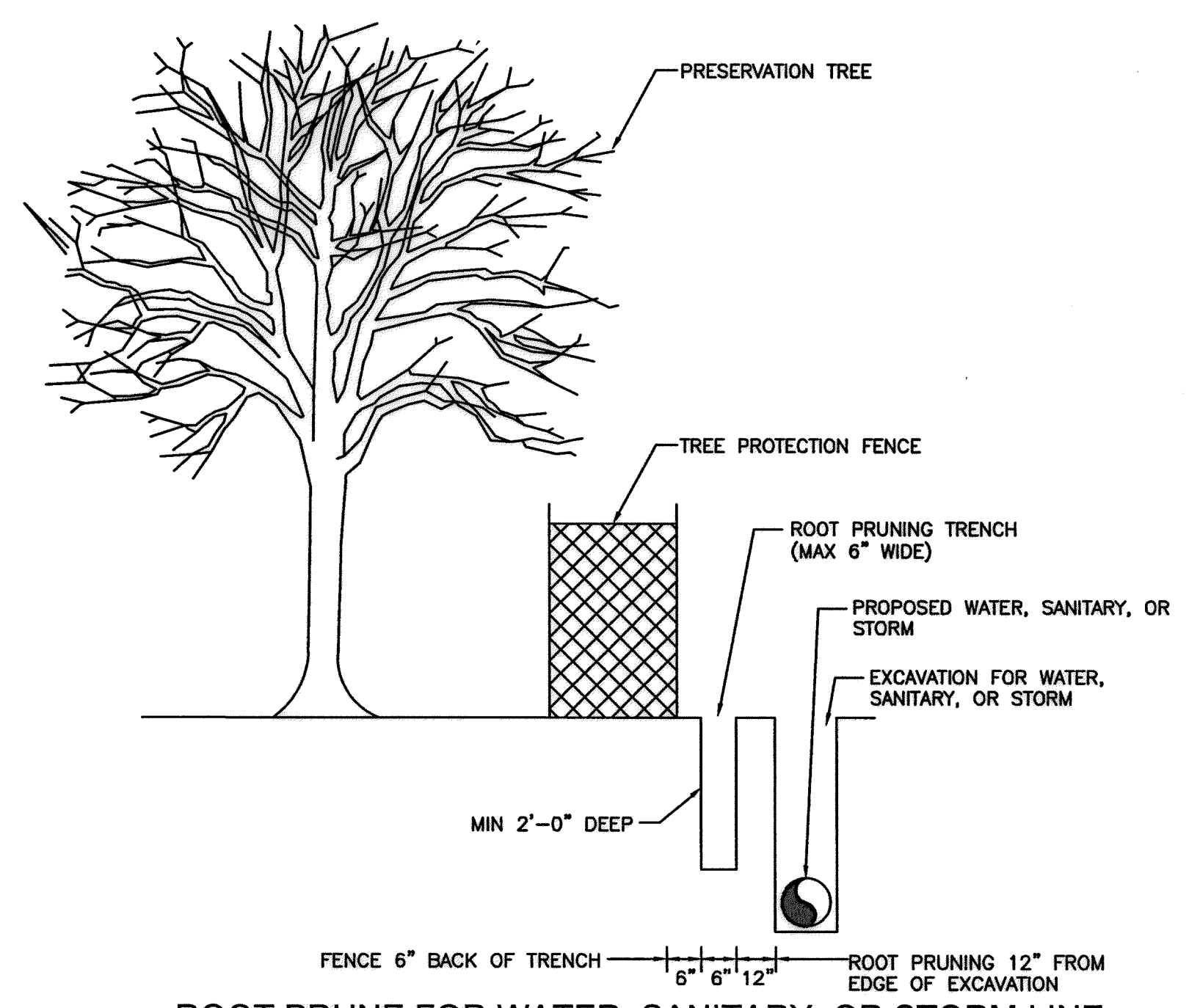
NOTE: TREE REPLACEMENT LOCATIONS SHOWN ON PLANS MUST BE COORDINATED WITH ADJACENT PROPERTY OWNER AND CITY OF HOUSTON URBAN FORESTRY PRIOR TO EXCAVATION FOR PLANTING. COORDINATION SHALL BE COMPLETED BY CONSTRUCTION CONTRACTOR'S CERTIFIED ARBORIST. TREES TO BE MAINTAINED AND WATERED FOR 2 YEARS FOLLOWING PLANTING PER STANDARD SPEC 02915. TIMING OF PLANTING MAY BE DELAYED IN PERIODS OF DROUGHT WITH MANDATORY WATER RESTRICTIONS IN PLACE-TIMING TO BE COORDINATED WITH CITY OF HOUSTON URBAN FORESTRY. TREES IN ESPLANADE GROUPINGS TO BE PLANTED IN COMMON BED WITH 4" OF HARDWOOD MULCH BETWEEN TREES.



**TREE PROTECTION FENCING DETAIL A**  
NOT TO SCALE



**TREE PROTECTION FENCING DETAIL B**  
NOT TO SCALE



**ROOT PRUNE FOR WATER, SANITARY, OR STORM LINE**  
NOT TO SCALE

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

**C.N. Koehl**  
Urban Forestry, Inc.

210 Stone Bush Ct. • Katy, Texas 77493  
281-391-0022 ckoehl@koehlurbanforestry.com  
APPROVED: *Craig N. Koehl* 7-16-14

LUMPKIN ROAD  
N-T17000-0012-3

**TREE PROTECTION PLAN**  
SHEET 3 OF 3

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SHQ

FILE NO.: \_\_\_\_\_ FACILITY \_\_\_\_\_

DRAWING SCALE: \_\_\_\_\_ CITY DWG NO. \_\_\_\_\_

VERT: \_\_\_\_\_  
HORZ: 1"=40'

SHEET: 160 OF 186

APP. \_\_\_\_\_

REVISIONS \_\_\_\_\_

No. \_\_\_\_\_ DATE \_\_\_\_\_

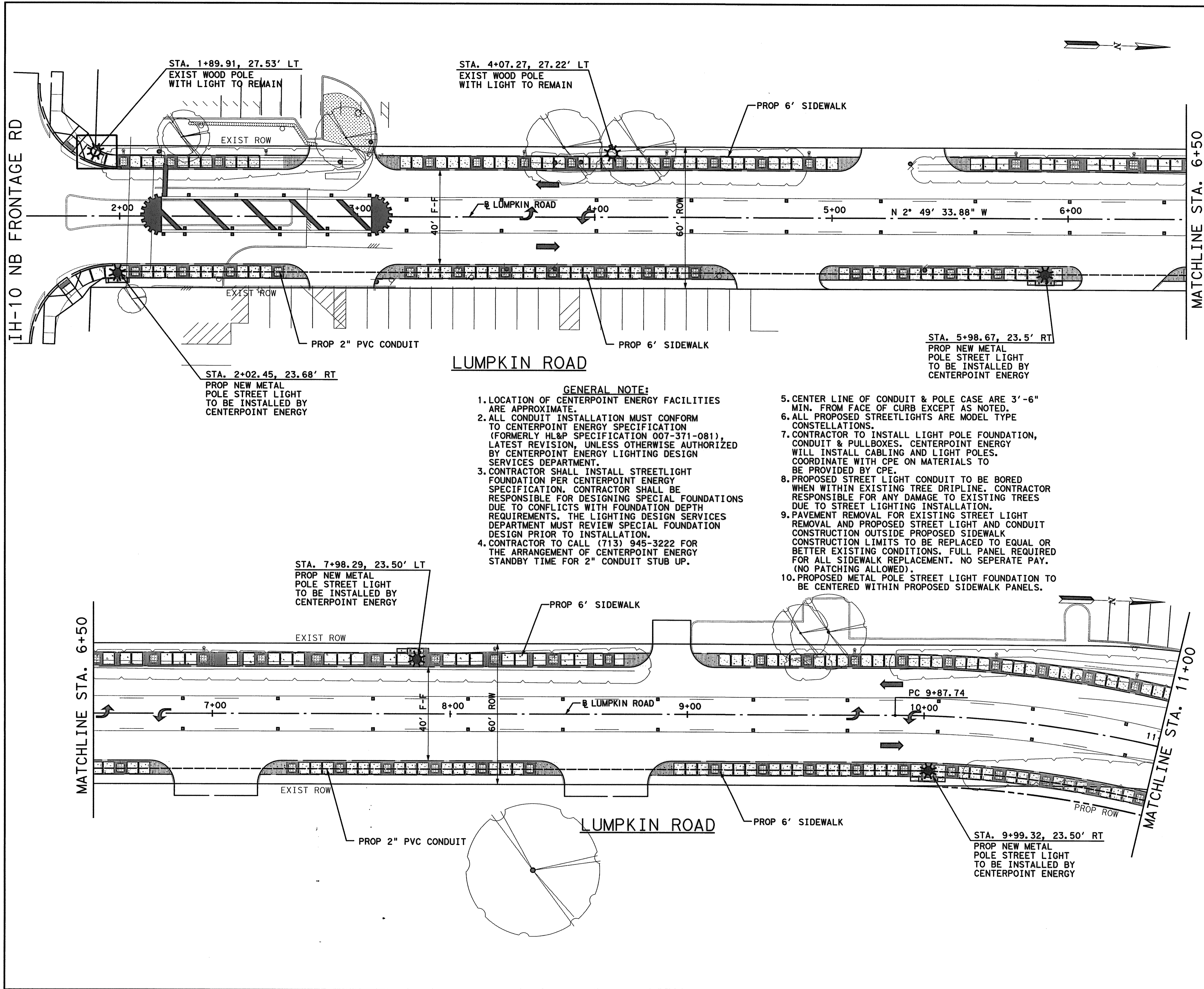
\$USERNAME\$

\$TIME\$

\$DATE\$

\$FILE\$





- STREETLIGHT LEGEND**
- \* PROPOSED NEW 250W HPS METAL POLE STREET LIGHT TO BE INSTALLED BY CENTERPOINT ENERGY
  - PROPOSED UNDERGROUND STREET LIGHT CIRCUIT IN 2-INCH PVC, SCHEDULE 40 CONDUIT PER CENTERPOINT ENERGY SPECIFICATIONS.
  - EXIST STREET LIGHT PULLBOX. CONTRACTOR TO STUB PROPOSED 2" CONDUIT INTO PULLBOX WITH 90° ELBOW. CENTERPOINT ENERGY PERSONNEL MUST STAND BY DURING INSTALLATION. SEE GENERAL NOTE 4.
  - PROPOSED TREE LOCATION
  - ☼ EXIST. WOOD POLE WITH LIGHT (TO REMAIN)
  - ☼<sub>R</sub> EXIST. WOOD POLE WITH LIGHT (TO BE RELOCATED)

- GENERAL NOTE:**
1. LOCATION OF CENTERPOINT ENERGY FACILITIES ARE APPROXIMATE.
  2. ALL CONDUIT INSTALLATION MUST CONFORM TO CENTERPOINT ENERGY SPECIFICATION (FORMERLY HL&P SPECIFICATION 007-371-081), LATEST REVISION, UNLESS OTHERWISE AUTHORIZED BY CENTERPOINT ENERGY LIGHTING DESIGN SERVICES DEPARTMENT.
  3. CONTRACTOR SHALL INSTALL STREETLIGHT FOUNDATION PER CENTERPOINT ENERGY SPECIFICATION. CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING SPECIAL FOUNDATIONS DUE TO CONFLICTS WITH FOUNDATION DEPTH REQUIREMENTS. THE LIGHTING DESIGN SERVICES DEPARTMENT MUST REVIEW SPECIAL FOUNDATION DESIGN PRIOR TO INSTALLATION.
  4. CONTRACTOR TO CALL (713) 945-3222 FOR THE ARRANGEMENT OF CENTERPOINT ENERGY STANDBY TIME FOR 2" CONDUIT STUB UP.
  5. CENTER LINE OF CONDUIT & POLE CASE ARE 3'-6" MIN. FROM FACE OF CURB EXCEPT AS NOTED.
  6. ALL PROPOSED STREETLIGHTS ARE MODEL TYPE CONSTELLATIONS.
  7. CONTRACTOR TO INSTALL LIGHT POLE FOUNDATION, CONDUIT & PULLBOXES. CENTERPOINT ENERGY WILL INSTALL CABLING AND LIGHT POLES. COORDINATE WITH CPE ON MATERIALS TO BE PROVIDED BY CPE.
  8. PROPOSED STREET LIGHT CONDUIT TO BE BORED WHEN WITHIN EXISTING TREE DRIPLINE. CONTRACTOR RESPONSIBLE FOR ANY DAMAGE TO EXISTING TREES DUE TO STREET LIGHTING INSTALLATION.
  9. PAVEMENT REMOVAL FOR EXISTING STREET LIGHT REMOVAL AND PROPOSED STREET LIGHT AND CONDUIT CONSTRUCTION OUTSIDE PROPOSED SIDEWALK CONSTRUCTION LIMITS TO BE REPLACED TO EQUAL OR BETTER EXISTING CONDITIONS. FULL PANEL REQUIRED FOR ALL SIDEWALK REPLACEMENT. NO SEPERATE PAY. (NO PATCHING ALLOWED).
  10. PROPOSED METAL POLE STREET LIGHT FOUNDATION TO BE CENTERED WITHIN PROPOSED SIDEWALK PANELS.

9-15-2014

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

MEMORIAL CITY  
REDEVELOPMENT AUTHORITY

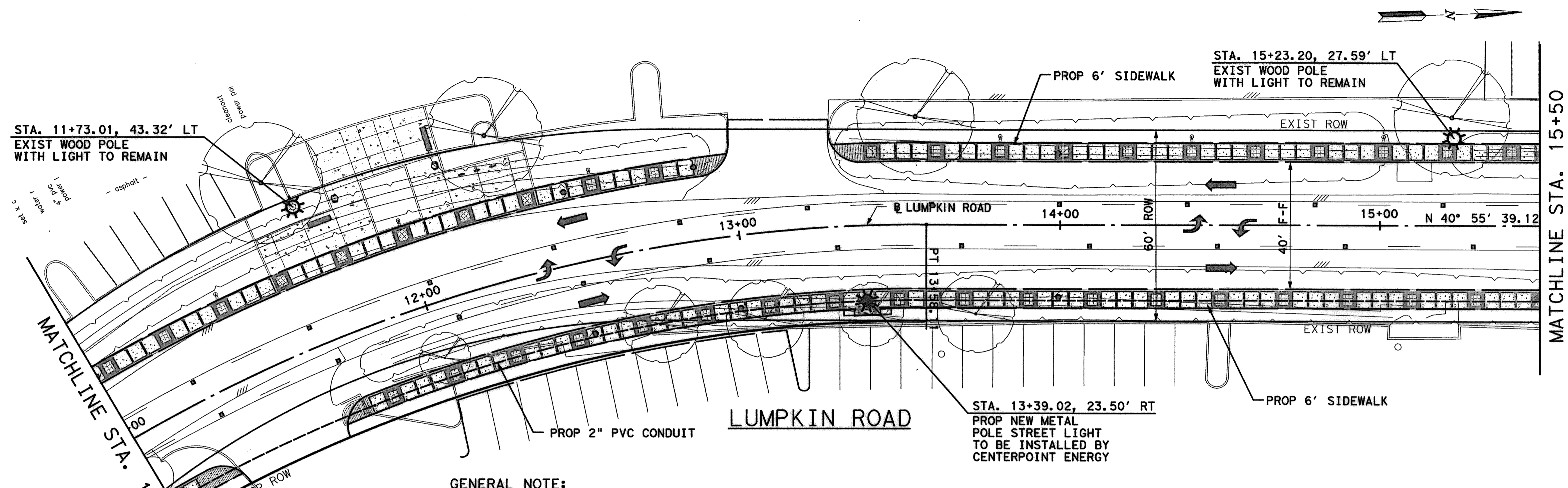
**LAN** Lockwood, Andrews  
& Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
STREET LIGHTING PLAN  
SHEET 1 OF 4

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG NO.
VERT: HORZ: 1"=20'		
SHEET: 161 OF 226		

9/18/2014 11:26:50 AM M:\guthrie  
 9/18/2014 11:26:50 AM M:\guthrie  
 9/18/2014 11:26:50 AM M:\guthrie

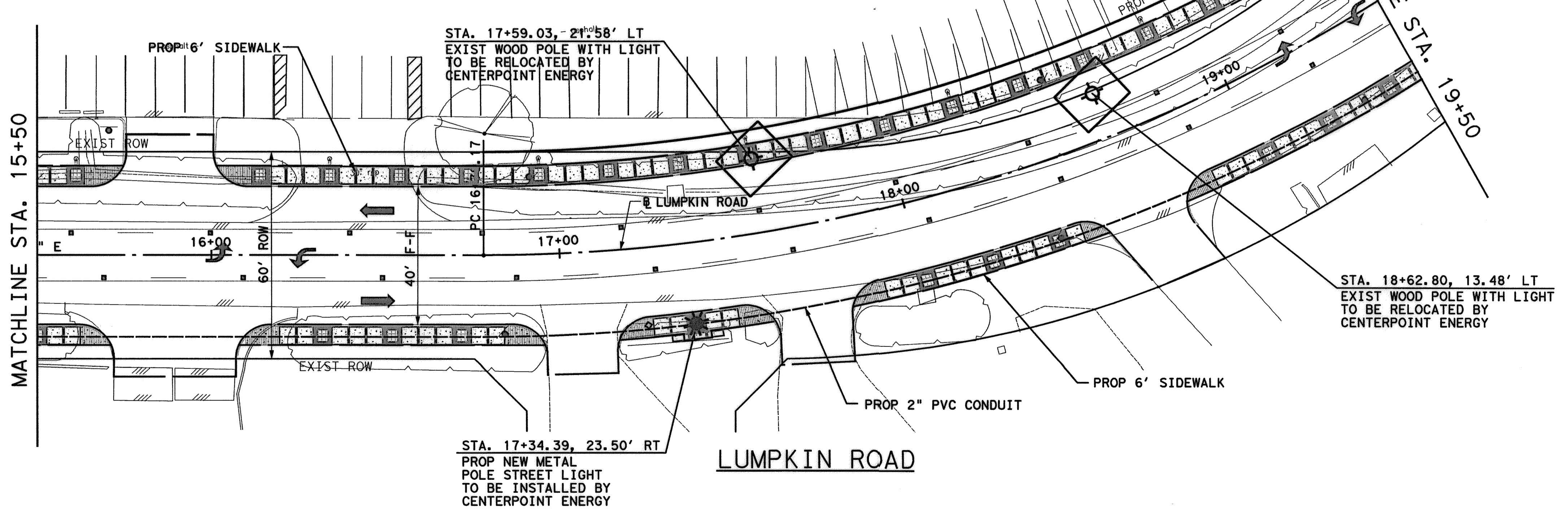


MATCHLINE STA. 11+00

MATCHLINE STA. 15+50

- GENERAL NOTE:**
1. LOCATION OF CENTERPOINT ENERGY FACILITIES ARE APPROXIMATE.
  2. ALL CONDUIT INSTALLATION MUST CONFORM TO CENTERPOINT ENERGY SPECIFICATION (FORMERLY HL&P SPECIFICATION 007-371-081), LATEST REVISION, UNLESS OTHERWISE AUTHORIZED BY CENTERPOINT ENERGY LIGHTING DESIGN SERVICES DEPARTMENT.
  3. CONTRACTOR SHALL INSTALL STREETLIGHT FOUNDATION PER CENTERPOINT ENERGY SPECIFICATION. CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING SPECIAL FOUNDATIONS DUE TO CONFLICTS WITH FOUNDATION DEPTH REQUIREMENTS. THE LIGHTING DESIGN SERVICES DEPARTMENT MUST REVIEW SPECIAL FOUNDATION DESIGN PRIOR TO INSTALLATION.
  4. CONTRACTOR TO CALL (713) 945-3222 FOR THE ARRANGEMENT OF CENTERPOINT ENERGY STANDBY TIME FOR 2" CONDUIT STUB UP.
  5. CENTER LINE OF CONDUIT & POLE CASE ARE 3'-6" MIN. FROM FACE OF CURB EXCEPT AS NOTED.

6. ALL PROPOSED STREETLIGHTS ARE MODEL TYPE CONSTELLATIONS.
7. CONTRACTOR TO INSTALL LIGHT POLE FOUNDATION, CONDUIT & PULLBOXES. CENTERPOINT ENERGY WILL INSTALL CABLING AND LIGHT POLES. COORDINATE WITH CPE ON MATERIALS TO BE PROVIDED BY CPE.
8. PROPOSED STREET LIGHT CONDUIT TO BE BORED WHEN WITHIN EXISTING TREE DRIPLINE. CONTRACTOR RESPONSIBLE FOR ANY DAMAGE TO EXISTING TREES DUE TO STREET LIGHTING INSTALLATION.
9. PAVEMENT REMOVAL FOR EXISTING STREET LIGHT REMOVAL AND PROPOSED STREET LIGHT AND CONDUIT CONSTRUCTION OUTSIDE PROPOSED SIDEWALK CONSTRUCTION LIMITS TO BE REPLACED TO EQUAL OR BETTER EXISTING CONDITIONS. FULL PANEL REQUIRED FOR ALL SIDEWALK REPLACEMENT. NO SEPERATE PAY. (NO PATCHING ALLOWED).
10. PROPOSED METAL POLE STREET LIGHT FOUNDATION TO BE CENTERED WITHIN PROPOSED SIDEWALK PANELS.



MATCHLINE STA. 15+50

MATCHLINE STA. 19+50

- STREETLIGHT LEGEND**
- ☀️ PROPOSED NEW 250W HPS METAL POLE STREET LIGHT TO BE INSTALLED BY CENTERPOINT ENERGY
  - PROPOSED UNDERGROUND STREET LIGHT CIRCUIT IN 2-INCH PVC, SCHEDULE 40 CONDUIT PER CENTERPOINT ENERGY SPECIFICATIONS.
  - ☐ EXIST STREET LIGHT PULLBOX. CONTRACTOR TO STUB PROPOSED 2" CONDUIT INTO PULLBOX WITH 90° ELBOW. CENTERPOINT ENERGY PERSONNEL MUST STAND BY DURING INSTALLATION. SEE GENERAL NOTE 4.
  - ⊙ PROPOSED TREE LOCATION
  - ☀️ EXIST. WOOD POLE WITH LIGHT (TO REMAIN)
  - ☀️ EXIST. WOOD POLE WITH LIGHT (TO BE RELOCATED)

9-15-2014

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY  
REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews  
& Newnam, Inc.**  
A LEO A DALY COMPANY

**LUMPKIN ROAD  
N-T17000-0012-3  
STREET LIGHTING PLAN**

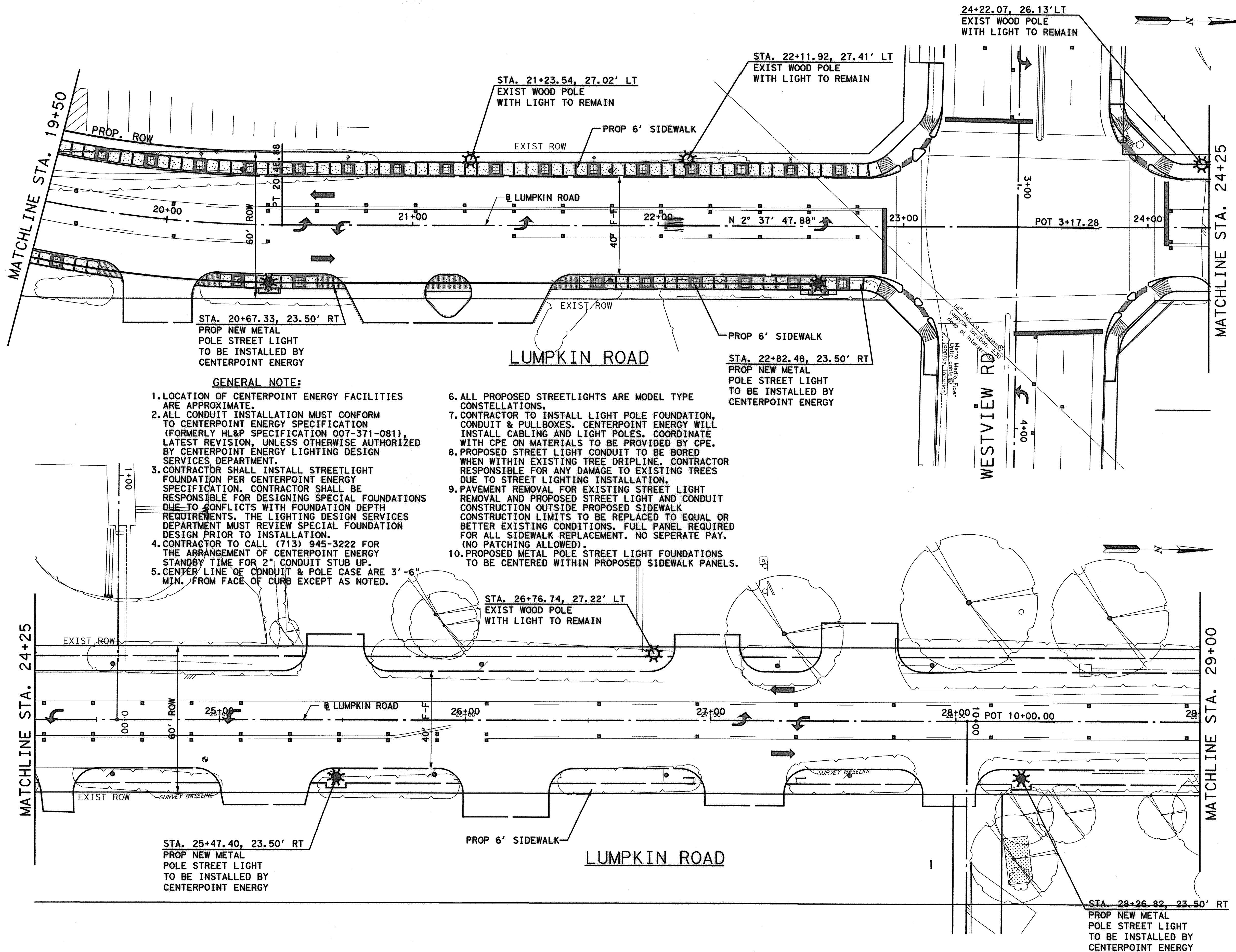
SHEET 2 OF 4

**CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING**

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: HORZ: 1"=20'	
SHEET: 162 OF 226	

11/20/04 AM 9/3/2014 p:\adpw\laddo\lnt\proj\ctw\se\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\Roadway\151-001-PR-LIGHTING\*2.dgn MUGuthrie



- GENERAL NOTE:**
1. LOCATION OF CENTERPOINT ENERGY FACILITIES ARE APPROXIMATE.
  2. ALL CONDUIT INSTALLATION MUST CONFORM TO CENTERPOINT ENERGY SPECIFICATION (FORMERLY HL&P SPECIFICATION 007-371-081), LATEST REVISION, UNLESS OTHERWISE AUTHORIZED BY CENTERPOINT ENERGY LIGHTING DESIGN SERVICES DEPARTMENT.
  3. CONTRACTOR SHALL INSTALL STREETLIGHT FOUNDATION PER CENTERPOINT ENERGY SPECIFICATION. CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING SPECIAL FOUNDATIONS DUE TO CONFLICTS WITH FOUNDATION DEPTH REQUIREMENTS. THE LIGHTING DESIGN SERVICES DEPARTMENT MUST REVIEW SPECIAL FOUNDATION DESIGN PRIOR TO INSTALLATION.
  4. CONTRACTOR TO CALL (713) 945-3222 FOR THE ARRANGEMENT OF CENTERPOINT ENERGY STANDBY TIME FOR 2" CONDUIT STUB UP.
  5. CENTER LINE OF CONDUIT & POLE CASE ARE 3'-6" MIN. FROM FACE OF CURB EXCEPT AS NOTED.
  6. ALL PROPOSED STREETLIGHTS ARE MODEL TYPE CONSTELLATIONS.
  7. CONTRACTOR TO INSTALL LIGHT POLE FOUNDATION, CONDUIT & PULLBOXES. CENTERPOINT ENERGY WILL INSTALL CABLING AND LIGHT POLES. COORDINATE WITH CPE ON MATERIALS TO BE PROVIDED BY CPE.
  8. PROPOSED STREET LIGHT CONDUIT TO BE BORED WHEN WITHIN EXISTING TREE DRIPLINE. CONTRACTOR RESPONSIBLE FOR ANY DAMAGE TO EXISTING TREES DUE TO STREET LIGHTING INSTALLATION.
  9. PAVEMENT REMOVAL FOR EXISTING STREET LIGHT REMOVAL AND PROPOSED STREET LIGHT AND CONDUIT CONSTRUCTION OUTSIDE PROPOSED SIDEWALK CONSTRUCTION LIMITS TO BE REPLACED TO EQUAL OR BETTER EXISTING CONDITIONS. FULL PANEL REQUIRED FOR ALL SIDEWALK REPLACEMENT. NO SEPERATE PAY. (NO PATCHING ALLOWED).
  10. PROPOSED METAL POLE STREET LIGHT FOUNDATIONS TO BE CENTERED WITHIN PROPOSED SIDEWALK PANELS.

- STREETLIGHT LEGEND**
- ☀ PROPOSED NEW 250W HPS METAL POLE STREET LIGHT TO BE INSTALLED BY CENTERPOINT ENERGY
  - PROPOSED UNDERGROUND STREET LIGHT CIRCUIT IN 2-INCH PVC, SCHEDULE 40 CONDUIT PER CENTERPOINT ENERGY SPECIFICATIONS.
  - EXIST STREET LIGHT PULLBOX. CONTRACTOR TO STUB PROPOSED 2" CONDUIT INTO PULLBOX WITH 90° ELBOW. CENTERPOINT ENERGY PERSONNEL MUST STAND BY DURING INSTALLATION. SEE GENERAL NOTE 4.
  - ⊙ PROPOSED TREE LOCATION
  - ☀ EXIST. WOOD POLE WITH LIGHT (TO REMAIN)
  - ☀<sub>R</sub> EXIST. WOOD POLE WITH LIGHT (TO BE RELOCATED)

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

---

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

---

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

---

**LUMPKIN ROAD**  
N-117000-0012-3

**STREET LIGHTING PLAN**

**SHEET 3 OF 4**

---

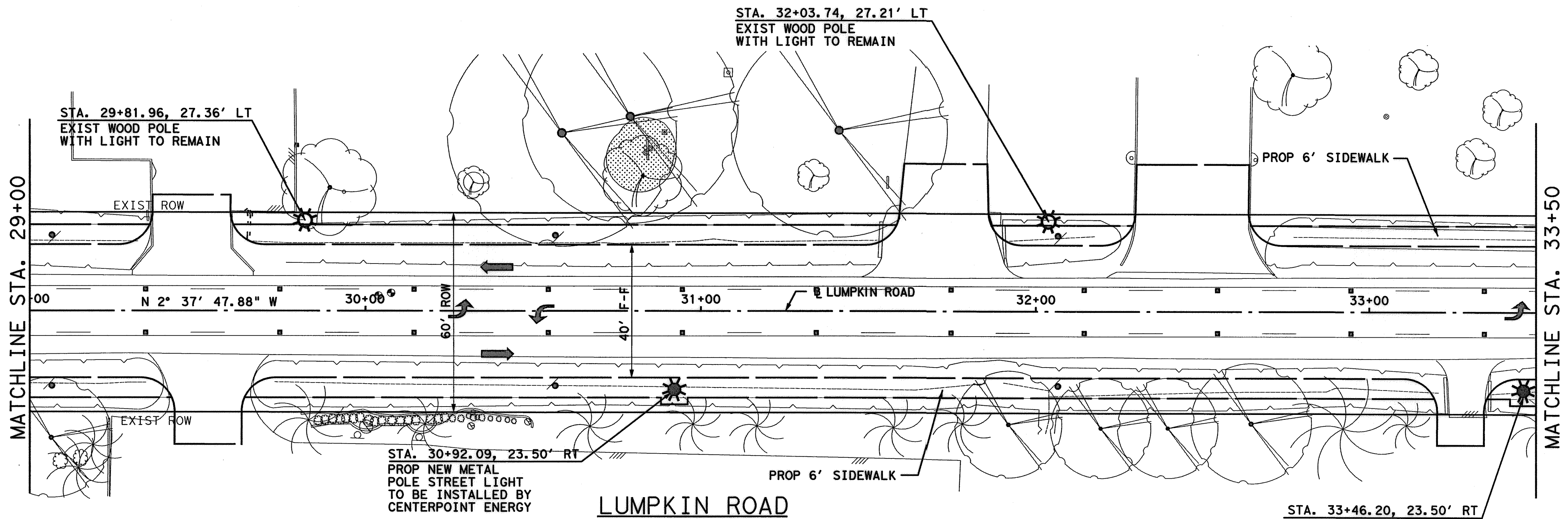
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

---

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: 1"=2'	
HORZ: 1"=20'	
SHEET:	
163 OF 226	

9/3/2014 11:20:14 AM  
 p:\adpw\adcoo\intproj\wise\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\Roadway\152-001-PR-LIGHTING\3.dgn

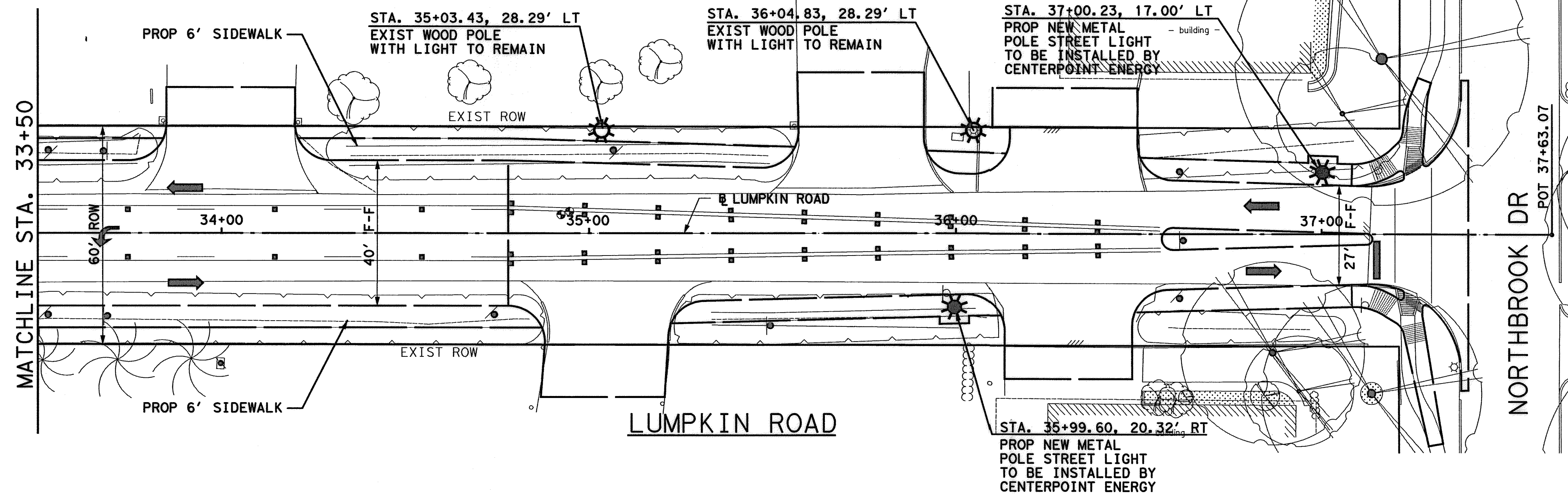


- STREETLIGHT LEGEND**
- PROPOSED NEW 250W HPS METAL POLE STREET LIGHT TO BE INSTALLED BY CENTERPOINT ENERGY
  - PROPOSED UNDERGROUND STREET LIGHT CIRCUIT IN 2-INCH PVC, SCHEDULE 40 CONDUIT PER CENTERPOINT ENERGY SPECIFICATIONS.
  - EXIST STREET LIGHT PULLBOX. CONTRACTOR TO STUB PROPOSED 2" CONDUIT INTO PULLBOX WITH 90° ELBOW. CENTERPOINT ENERGY PERSONNEL MUST STAND BY DURING INSTALLATION. SEE GENERAL NOTE 4.
  - PROPOSED TREE LOCATION
  - EXIST. WOOD POLE WITH LIGHT (TO REMAIN)
  - EXIST. WOOD POLE WITH LIGHT (TO BE RELOCATED)

**GENERAL NOTE:**

1. LOCATION OF CENTERPOINT ENERGY FACILITIES ARE APPROXIMATE.
2. ALL CONDUIT INSTALLATION MUST CONFORM TO CENTERPOINT ENERGY SPECIFICATION (FORMERLY HL&P SPECIFICATION 007-371-081), LATEST REVISION, UNLESS OTHERWISE AUTHORIZED BY CENTERPOINT ENERGY LIGHTING DESIGN SERVICES DEPARTMENT.
3. CONTRACTOR SHALL INSTALL STREETLIGHT FOUNDATION PER CENTERPOINT ENERGY SPECIFICATION. CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING SPECIAL FOUNDATIONS DUE TO CONFLICTS WITH FOUNDATION DEPTH REQUIREMENTS. THE LIGHTING DESIGN SERVICES DEPARTMENT MUST REVIEW SPECIAL FOUNDATION DESIGN PRIOR TO INSTALLATION.
4. CONTRACTOR TO CALL (713) 945-3222 FOR THE ARRANGEMENT OF CENTERPOINT ENERGY STANDBY TIME FOR 2" CONDUIT STUB UP.
5. CENTER LINE OF CONDUIT & POLE CASE ARE 3'-6" MIN. FROM FACE OF CURB EXCEPT AS NOTED.
6. ALL PROPOSED STREETLIGHTS ARE MODEL TYPE CONSTELLATIONS.
7. CONTRACTOR TO INSTALL LIGHT POLE FOUNDATION, CONDUIT & PULLBOXES. CENTERPOINT ENERGY WILL INSTALL CABLING AND LIGHT POLES. COORDINATE WITH CPE ON MATERIALS TO BE PROVIDED BY CPE.
8. PROPOSED STREET LIGHT CONDUIT TO BE BORED WHEN WITHIN EXISTING TREE DRIPLINE. CONTRACTOR RESPONSIBLE FOR ANY DAMAGE TO EXISTING TREES DUE TO STREET LIGHTING INSTALLATION.
9. PAVEMENT REMOVAL FOR EXISTING STREET LIGHT REMOVAL AND PROPOSED STREET LIGHT AND CONDUIT CONSTRUCTION OUTSIDE PROPOSED SIDEWALK CONSTRUCTION LIMITS TO BE REPLACED TO EQUAL OR BETTER EXISTING CONDITIONS. FULL PANEL REQUIRED FOR ALL SIDEWALK REPLACEMENT. NO SEPERATE PAY. (NO PATCHING ALLOWED).

STA. 33+46.20, 23.50' RT  
 PROP NEW METAL POLE STREET LIGHT TO BE INSTALLED BY CENTERPOINT ENERGY



Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

---

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

---

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

---

**LUMPKIN ROAD**  
N-T17000-0012-3  
**STREET LIGHTING PLAN**

SHEET 4 OF 4

---

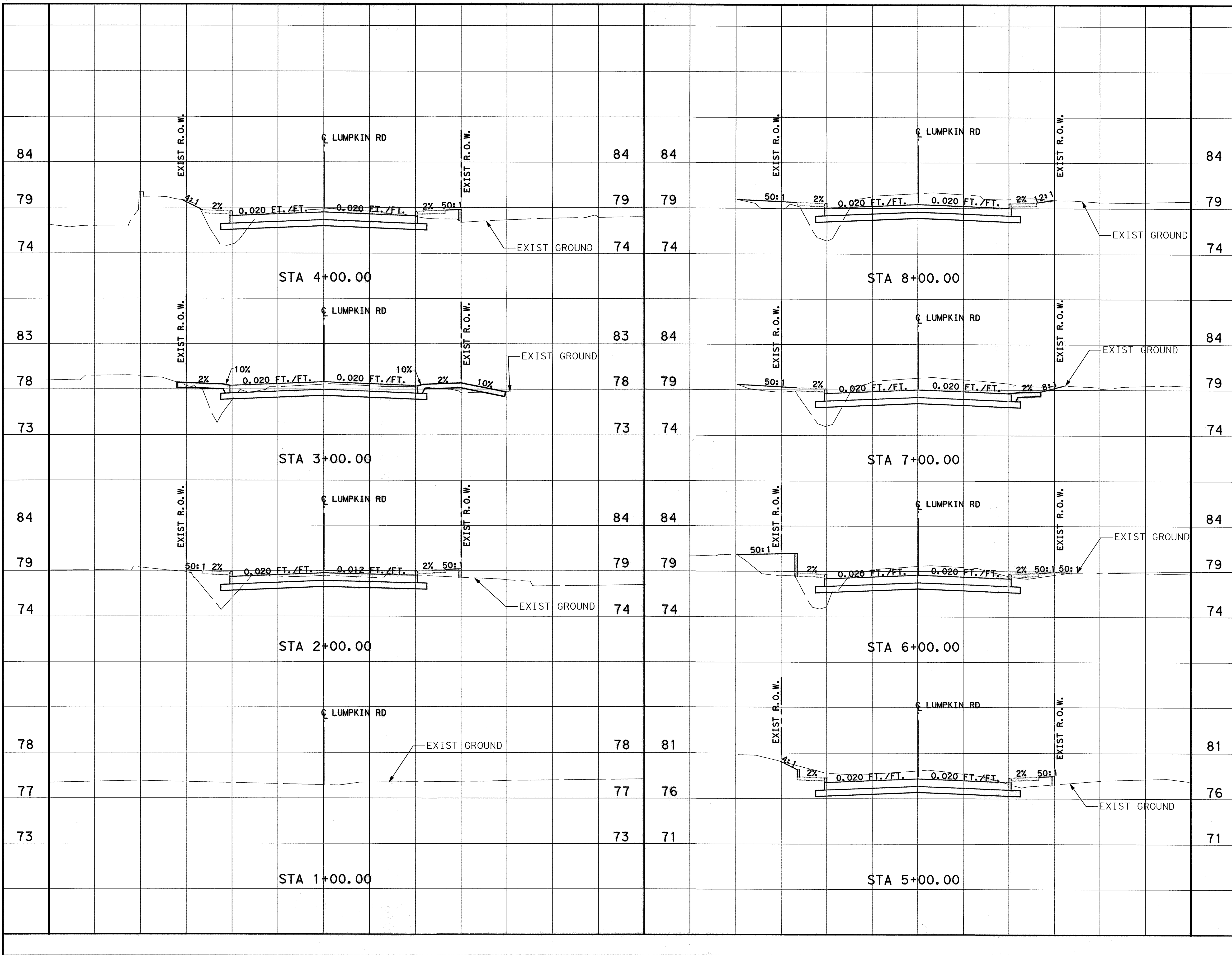
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

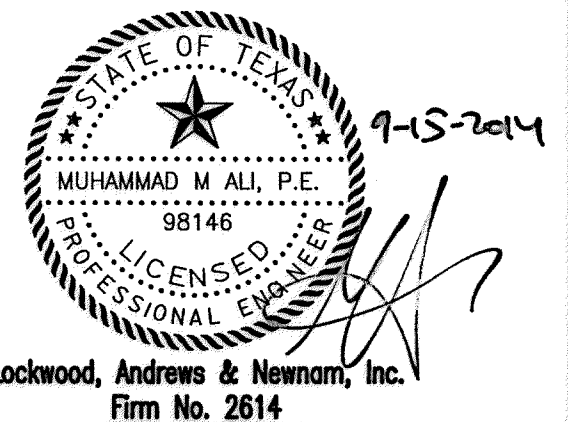
---

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: 1"=20'	
SHEET: 164 OF 226	

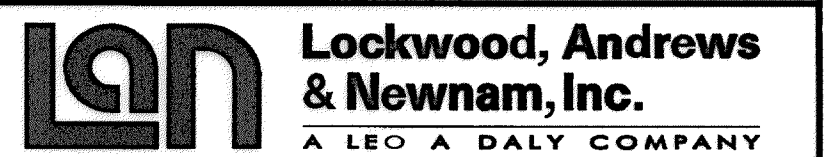
9/3/2014 11:20:24 AM MUGuthrie  
 \\adpw\laddoc\int\proj\wise\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\Roadway\153-001-PR-LIGHTING+4.dgn



NOTE:  
REFER TO TOE WALL DETAILS SHEET  
FOR SPECIFIC TOE WALL DETAILS  
AND LIMITS.



MEMORIAL CITY  
REDEVELOPMENT AUTHORITY



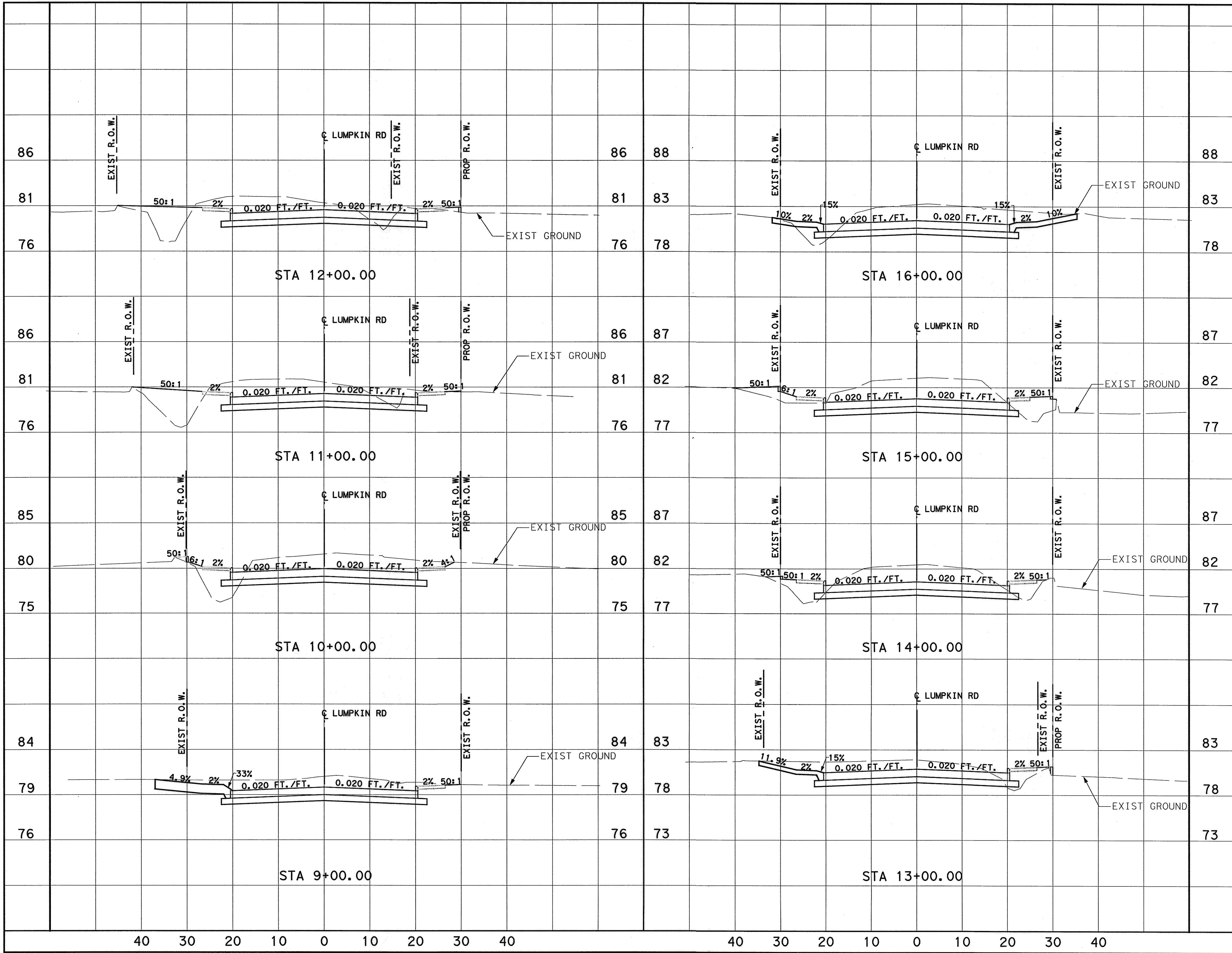
LUMPKIN ROAD  
N-T17000-0012-3  
CROSS SECTIONS

SHEET 1 OF 5

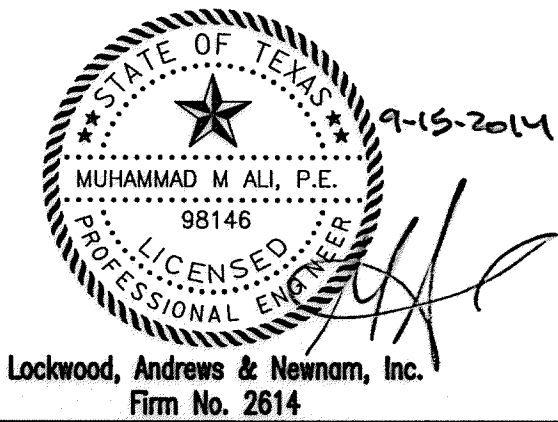
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=2' HORZ: 1"=20'		
SHEET: 165 OF 226		

No.	DATE	REVISIONS



NOTE:  
REFER TO THE WALL DETAILS SHEET  
FOR SPECIFIC TOE WALL DETAILS  
AND LIMITS.



MEMORIAL CITY  
REDEVELOPMENT AUTHORITY

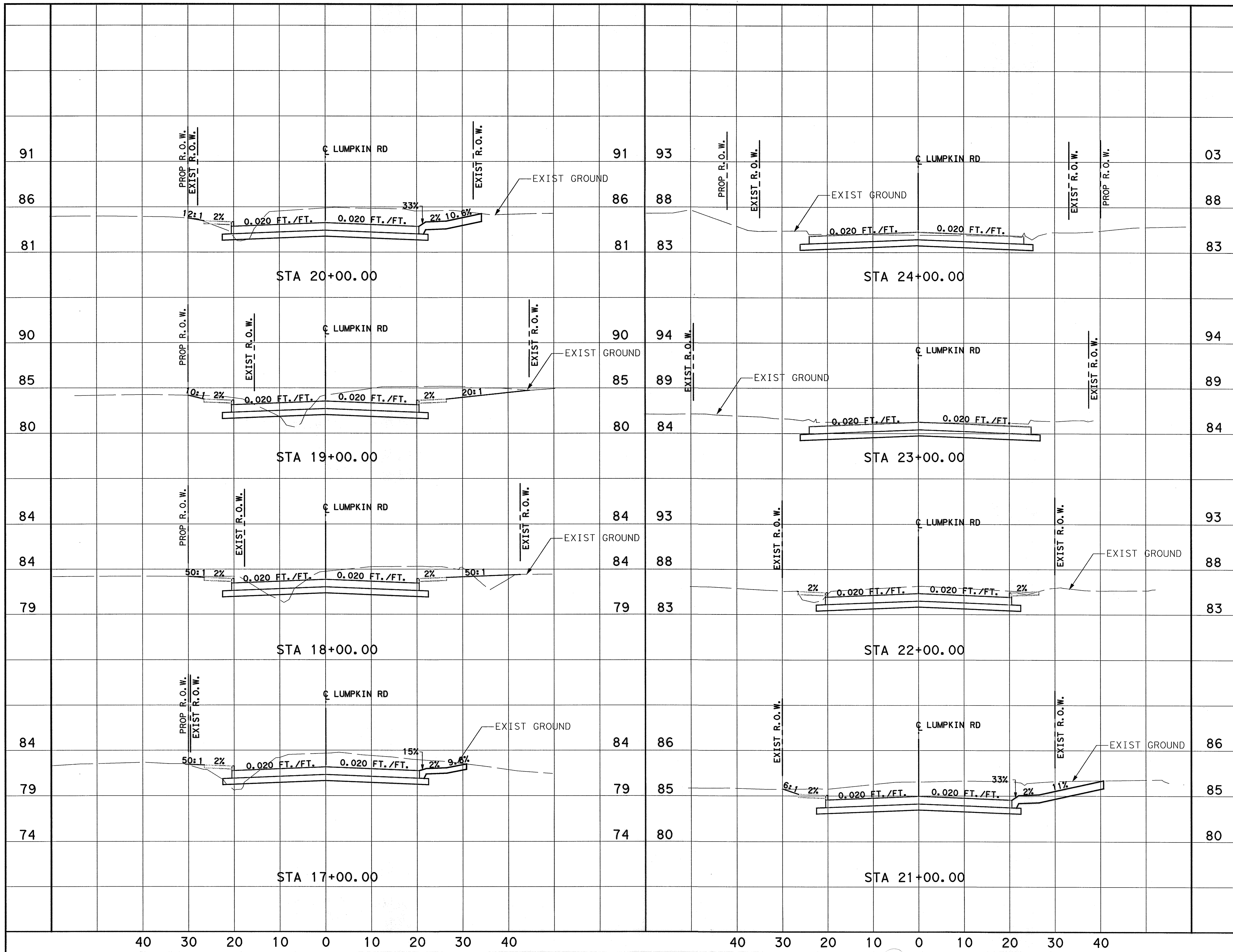


LUMPKIN ROAD  
N-T17000-0012-3  
CROSS SECTIONS

SHEET 2 OF 5  
CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO. :		FACILITY
DRAWING SCALE:		CITY DWG NO.
VERT: 1"=2' HORZ: 1"=20'		
SHEET:		
166 OF 226		

No.	DATE	REVISIONS	APP.



91	93	03
86	88	88
81	83	83
90	94	94
85	89	89
80	84	84
84	93	93
84	88	88
79	83	83
84	86	86
79	85	85
74	80	80

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

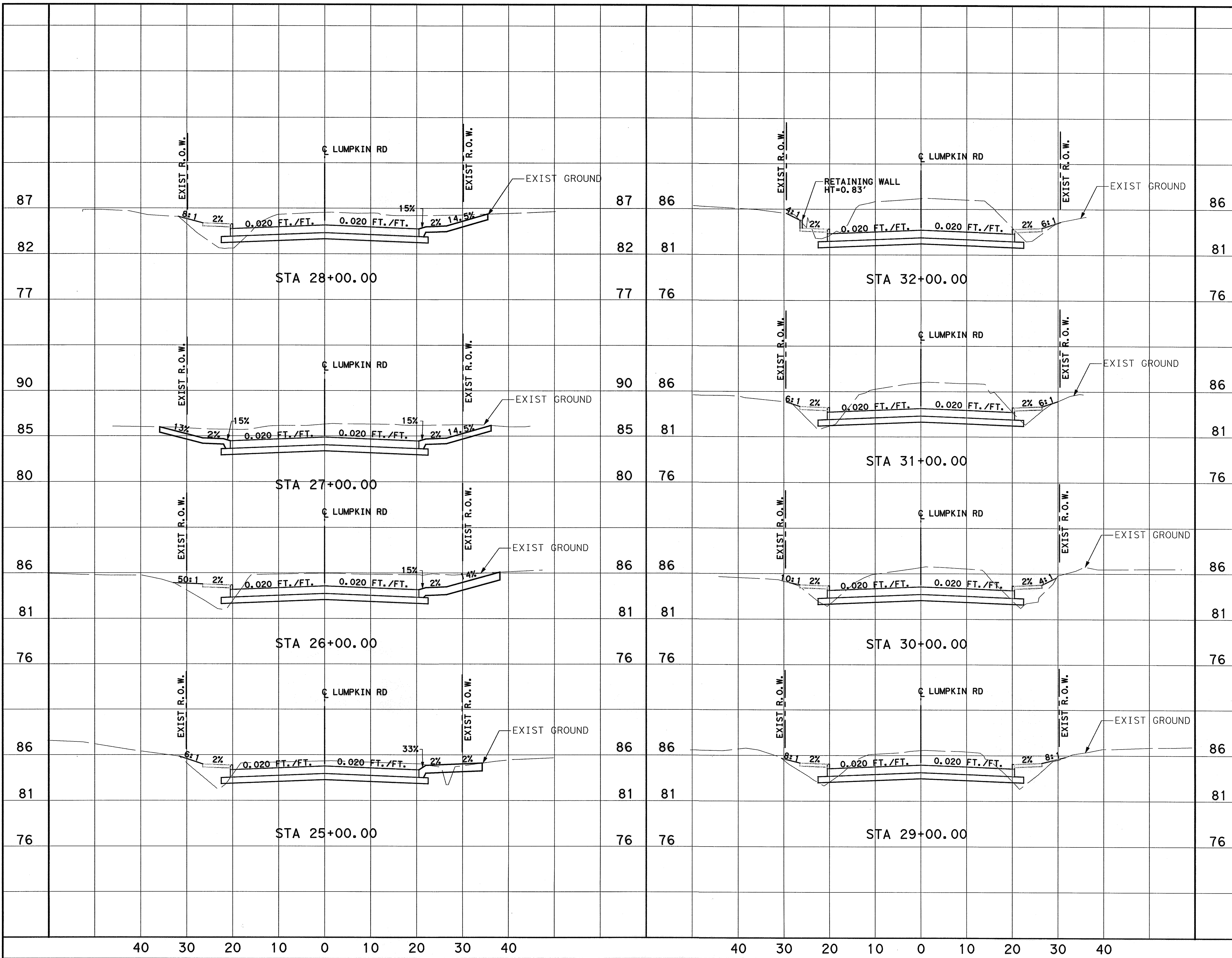
**LUMPKIN ROAD**  
N-T117000-0012-3  
**CROSS SECTIONS**

SHEET 3 OF 5

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: 1"=2'	
HORZ: 1"=20'	
SHEET:	
167 OF 226	



	APP.
	REVISIONS
	DATE
	No.

9-15-2014  
 Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

**LUMPKIN ROAD**  
 N-T17000-0012-3  
**CROSS SECTIONS**

SHEET 4 OF 5

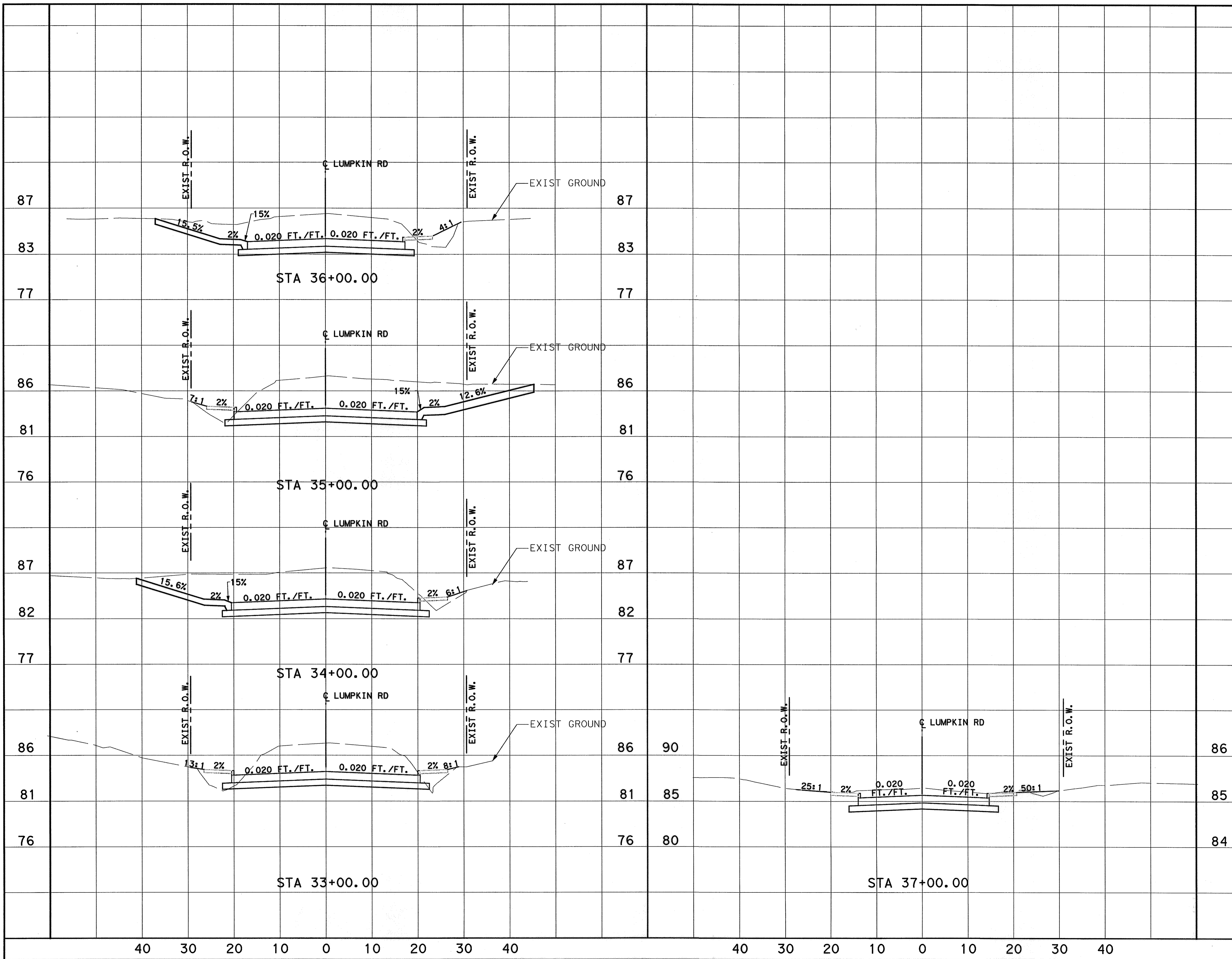
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: 1"=2'	
HORZ: 1"=20'	
SHEET:	
168 OF 226	

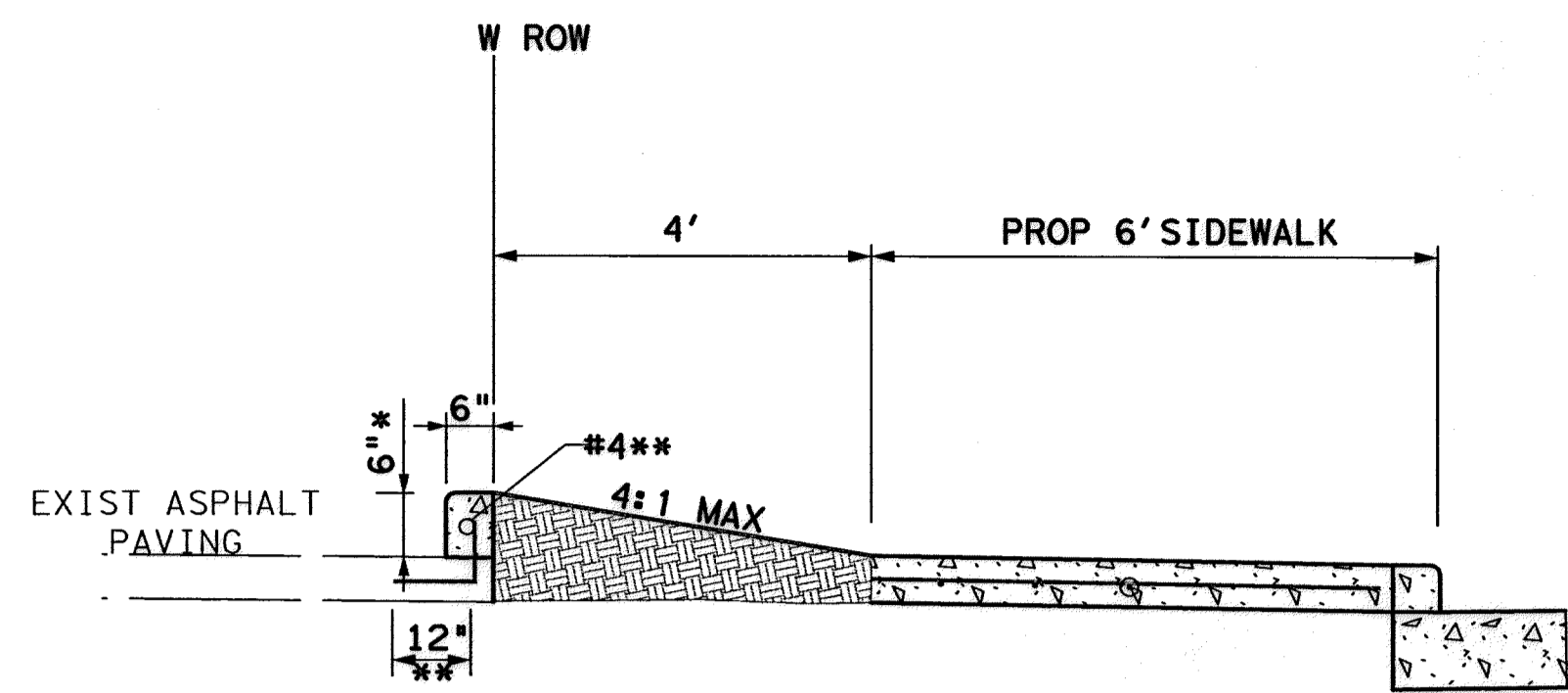
9/3/2014 11:21:04 AM MUGuthrie  
 pw \\ ladoop. ladoop. int\proj\wise\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\Geopak\DONN.157-001-XSECT-05.dgn



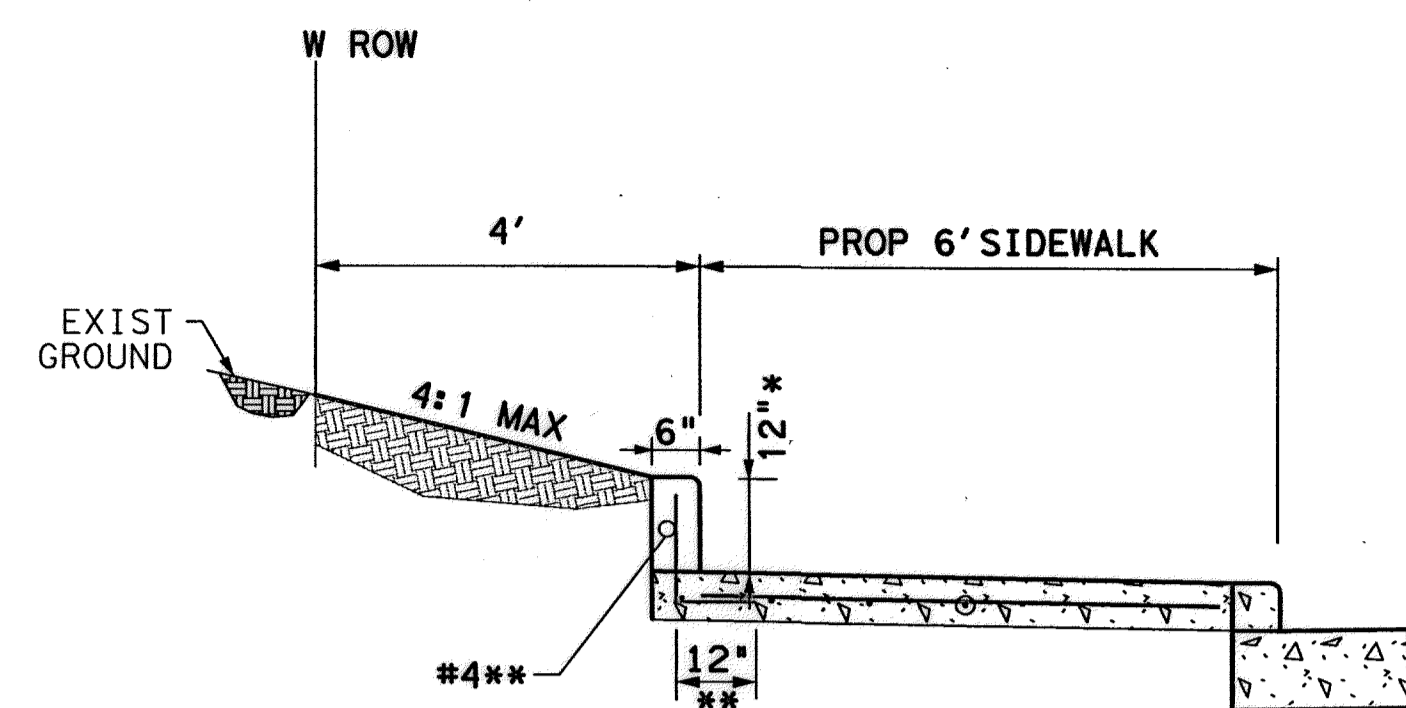


	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 50%;">No.</td><td style="width: 50%;">REVISONS</td></tr> <tr><td style="width: 50%;">DATE</td><td style="width: 50%;">APP.</td></tr> </table>	No.	REVISONS	DATE	APP.								
No.	REVISONS												
DATE	APP.												
Lockwood, Andrews & Newnam, Inc. Firm No. 2614													
<b>MEMORIAL CITY REDEVELOPMENT AUTHORITY</b>													
<b>LUMPKIN ROAD</b> N-T17000-0012-3 <b>CROSS SECTIONS</b>													
SHEET 5 OF 5 <b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING													
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">WATER</td> <td style="width: 33%;">WASTEWATER</td> <td style="width: 33%;">TRAFFIC</td> </tr> <tr> <td>ST. &amp; BRIDGE</td> <td>STORMWATER</td> <td>SWQ</td> </tr> </table>	WATER	WASTEWATER	TRAFFIC	ST. & BRIDGE	STORMWATER	SWQ							
WATER	WASTEWATER	TRAFFIC											
ST. & BRIDGE	STORMWATER	SWQ											
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">FILE NO.:</td> <td style="width: 30%;">FACILITY</td> </tr> <tr> <td>DRAWING SCALE:</td> <td>CITY DWG NO.</td> </tr> <tr> <td>VERT: 1"=2'</td> <td></td> </tr> <tr> <td>HORZ: 1"=20'</td> <td></td> </tr> <tr> <td>SHEET:</td> <td></td> </tr> <tr> <td>169 OF 226</td> <td></td> </tr> </table>		FILE NO.:	FACILITY	DRAWING SCALE:	CITY DWG NO.	VERT: 1"=2'		HORZ: 1"=20'		SHEET:		169 OF 226	
FILE NO.:	FACILITY												
DRAWING SCALE:	CITY DWG NO.												
VERT: 1"=2'													
HORZ: 1"=20'													
SHEET:													
169 OF 226													

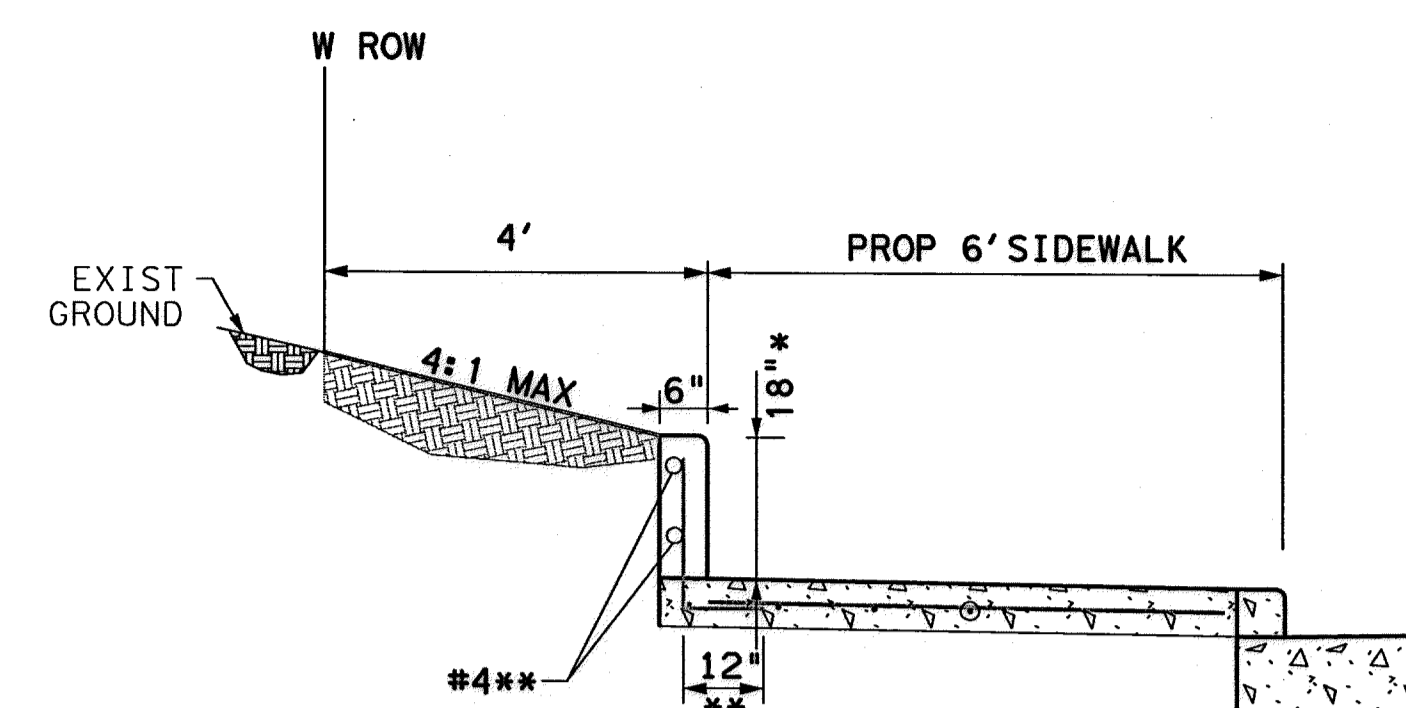
p:\l\adpw\laddo\int\proj\project\se\Documents\Projects\139-10384-001\4-0-Pr-product\len\4-01-Drawings\Geopak\DDN\158-001-XSECT-06.dgn 9/3/2014 11:21:12 AM MUGuthrie



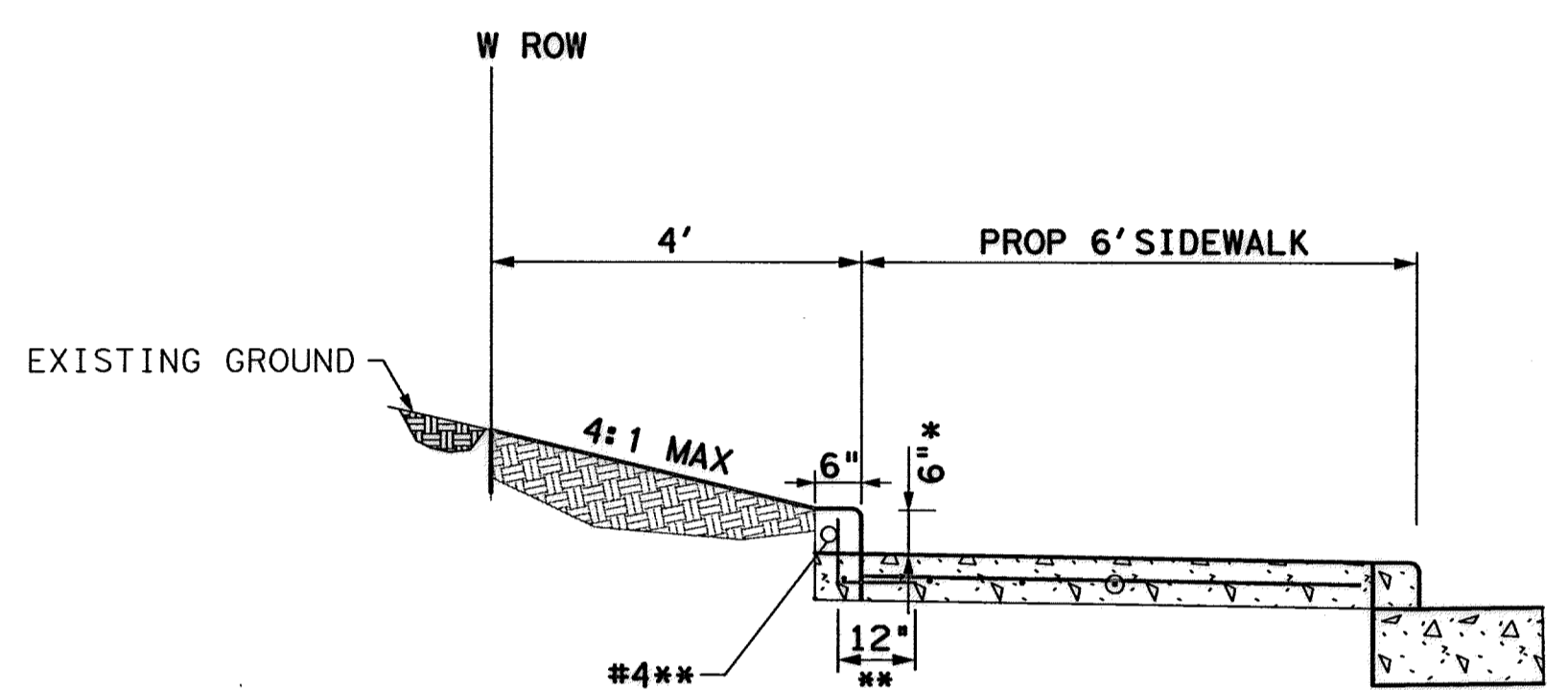
**(A) TOE WALL DETAILS**  
STA 3+20 TO 3+30



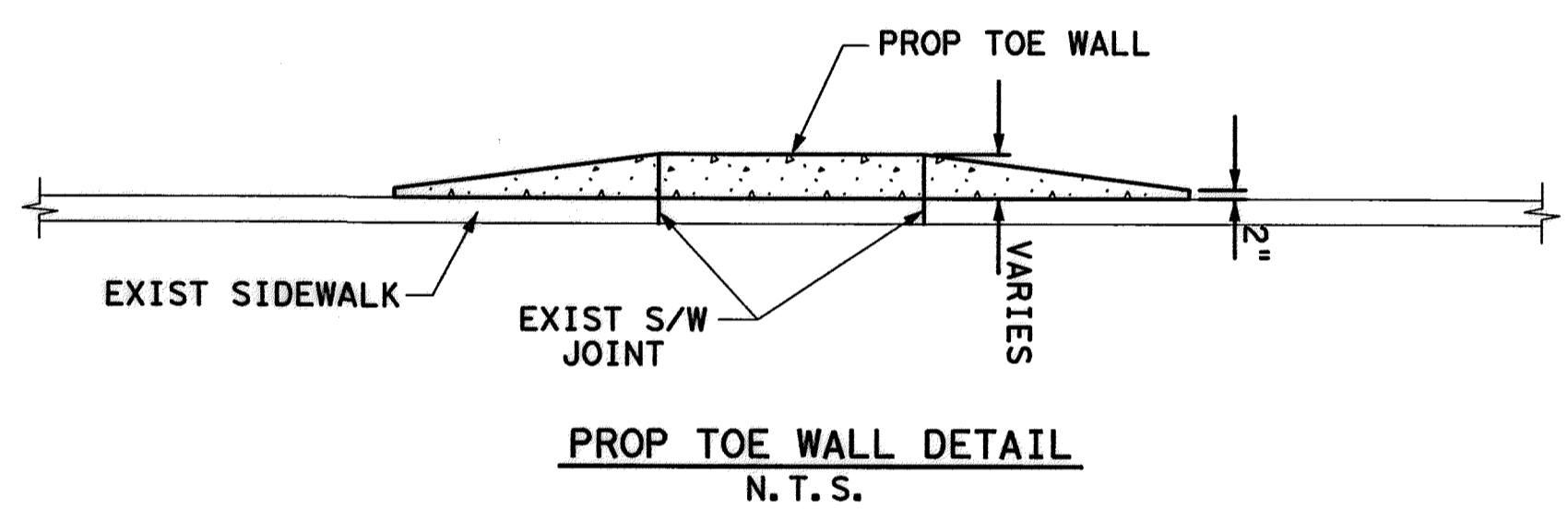
**(B) TOE WALL DETAILS**  
STA 3+90 TO 4+20  
AND  
STA 5+90 TO 6+70



**(C) TOE WALL DETAILS**  
STA 4+30 TO 5+00



**(D) TOE WALL DETAILS**  
STA 5+60 TO 5+70,  
STA 6+90 TO 8+00,  
STA 10+00 TO 10+20,  
AND  
STA 15+00 TO 15+50

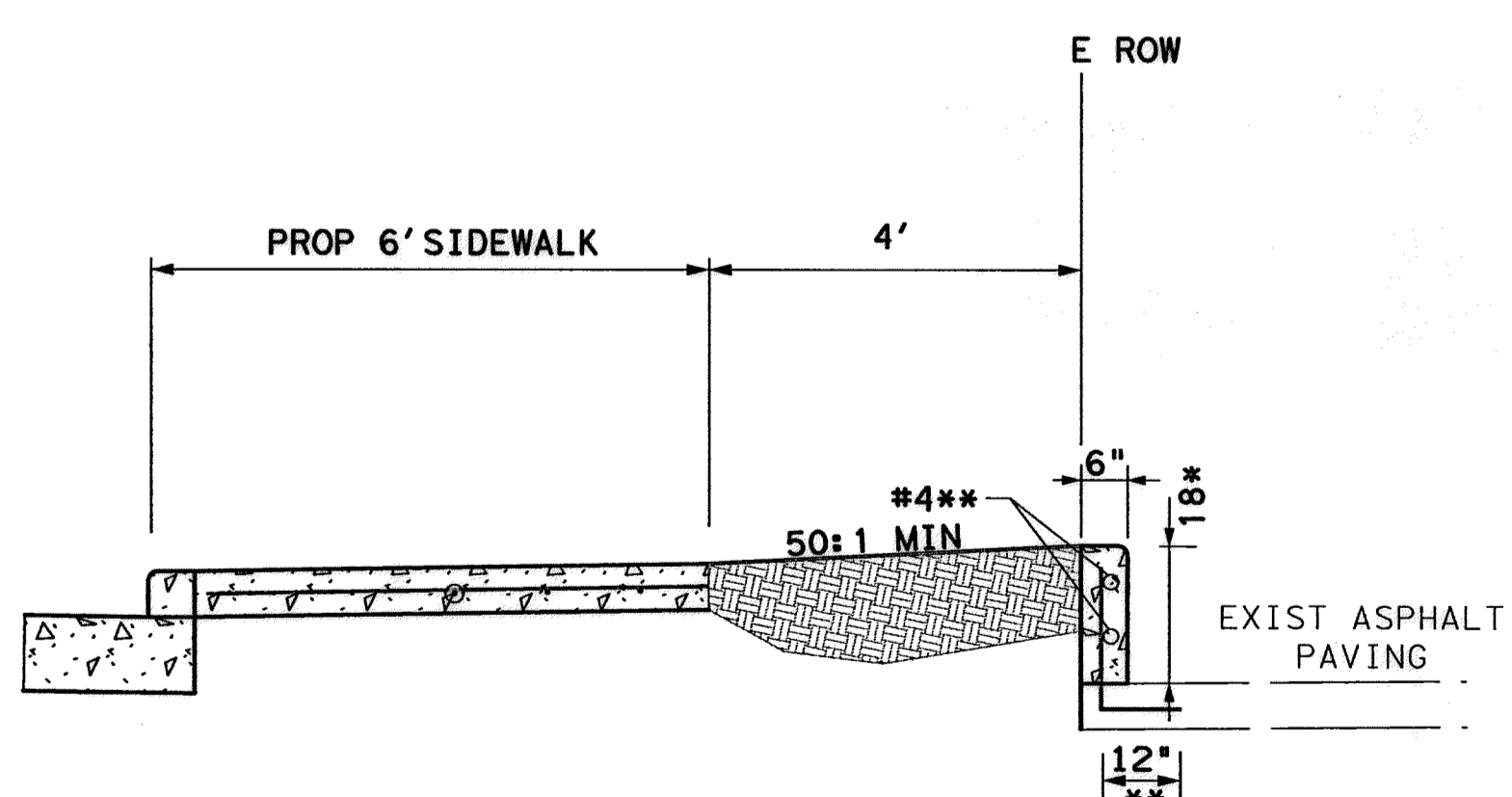


**PROP TOE WALL DETAIL**  
N. T. S.

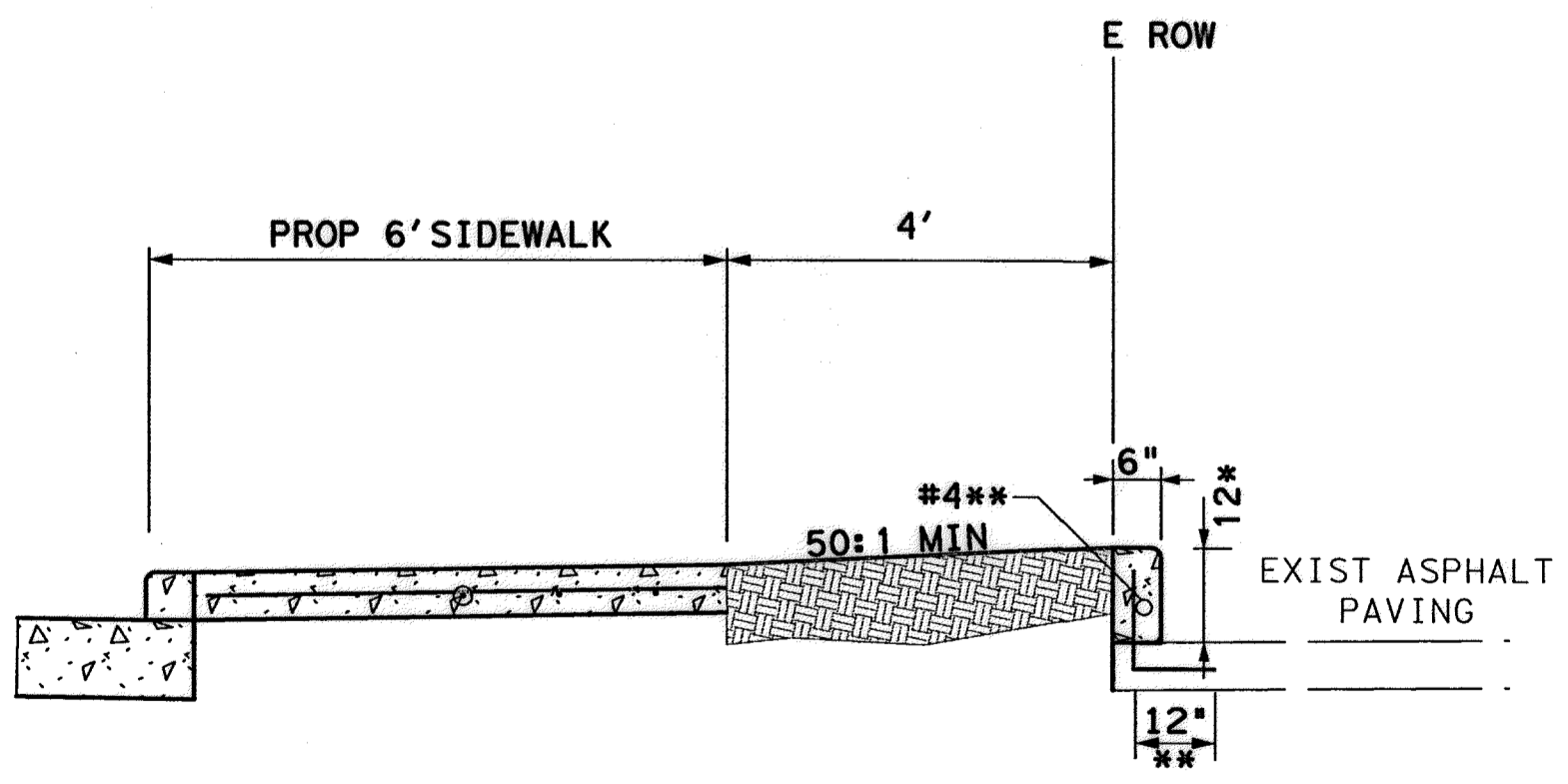
NOTE:

\* CONTRACTOR MUST ADJUST WALL HEIGHT WHERE NECESSARY FOR WALL HEIGHT TRANSITIONS AND TO MAINTAIN POSITIVE DRAINAGE.

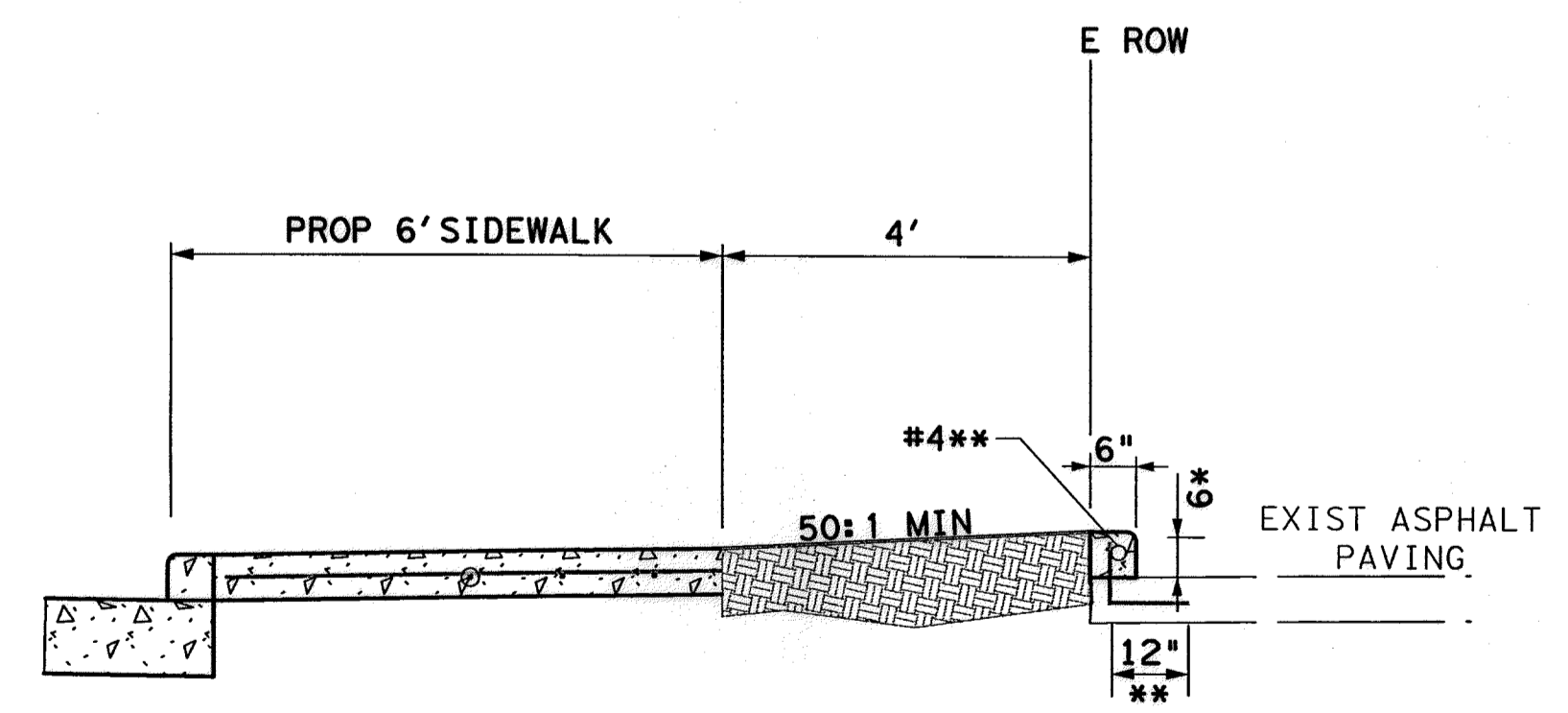
\*\* REFER TO CITY OF HOUSTON STANDARD DETAIL NO. 02771-01



**(A) TOE WALL DETAILS**  
STA 3+20 TO 3+90



**(B) TOE WALL DETAILS**  
STA 3+90 TO 4+40



**(C) TOE WALL DETAILS**  
STA 5+00 TO 5+90  
AND  
STA 12+00 TO 13+00

1-15-2014

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

**LUMPKIN ROAD**  
N-T17000-0012-3

**TOE WALL DETAILS**

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: 1"=2'	
HORZ: 1"=20'	
SHEET:	
170 OF 226	

MU04th-1e  
 11:21:30 AM  
 I:\Projects\130-10384-001\4-0-Drawings\Roadway\Standard Detail\TOE WALL DETAIL.dwg

**TREE PROTECTION NOTES:**

- ALL GUIDELINES STATED BELOW SHALL BE STRICTLY ADHERED TO AND MONITORED BY THE GENERAL CONTRACTOR AND ALL SUB-CONTRACTORS CONTRACTED BY THE GENERAL CONTRACTOR, OWNER AND/OR OTHER CONSULTANTS.
- TREE DRIP LINE IS DEFINED AS THE OUTER LIMIT OF THE TREE CANOPY EDGE AT ALL POINTS (360° AROUND TREE PERIMETER) SET AT FURTHEST OUTREACH OF SUCH NOTED TREE CANOPY.
- PRIOR TO TREE CLEARING, BRUSH REMOVAL, MASS GRADING OR ANY OTHER TYPE OF CONSTRUCTION OPERATION, THE GENERAL CONTRACTOR SHALL CLEARLY TAG OR MARK ALL TREES TO BE REMOVED AND OBTAIN THE COSL ARBORIST AND THE LANDSCAPE ARCHITECT'S FINAL APPROVAL PRIOR TO SUCH TREE REMOVAL AND TREE PROTECTION FENCING OPERATION COMMENCES.
- THE GENERAL CONTRACTOR SHALL PROVIDE AND SET TREE PROTECTION FENCING AROUND EACH TREE OR GROUP OF TREES TO BE RETAINED AS NOTED IN THESE DOCUMENTS TO PREVENT THE REMOVAL OF PROTECTED TREES, STORAGE OF CONSTRUCTION MATERIALS, PLACEMENT OF DEBRIS OR FILL, CONSTRUCTION OPERATIONS AND/OR EQUIPMENT USAGE WITHIN THE DRIP LINE.
- DURING CONSTRUCTION OPERATIONS, THE GENERAL CONTRACTOR SHALL PROHIBIT CLEANING, PARKING, OR STORAGE OF EQUIPMENT OR MATERIALS UNDER THE CANOPY OF TREES AND PREVENT RUN-OFF FROM SUCH NOTED ITEMS. THE CONTRACTOR SHALL NOT ALLOW THE DISPOSAL OF ANY WASTE MATERIAL SUCH AS, BUT NOT LIMITED TO, PAINT, OIL, SOLVENTS, ASPHALT, CONCRETE, MORTAR, ETC., OR ALLOW RUN-OFF FROM ANY SUCH ITEMS IN TO THE CANOPY AREA.
- NO ATTACHMENTS OR WIRES OF ANY KIND, OTHER THAN THOSE OF A PROTECTIVE NATURE, SHOULD BE ATTACHED TO ANY TREE.
- NO FILL OR STORAGE OF FILL MATERIALS OR ANY EXCAVATION OPERATIONS SHALL OCCUR WITHIN THE DRIP LINE OF A TREE TO BE PRESERVED UNLESS THERE IS A SPECIFIC APPROVED PLAN FOR USE OF TREE WELLS OR RETAINING WALLS. MAJOR CHANGES OF GRADE (SIX INCHES OR GREATER) WILL REQUIRE ADDITIONAL MEASURES TO MAINTAIN PROPER OXYGEN AND WATER EXCHANGE WITH THE ROOTS. IN ADDITION, THE DEVELOPER SHOULD ADHERE TO THE FOLLOWING GUIDELINES TO PROTECT THE TREES TO BE PRESERVED.
- REFER TO TREE PROTECTION/REMOVAL DOCUMENTS FOR FENCING LAYOUT AND TYPE OF FENCE REFERENCE INCLUDING TYPE AND SPECIFICATION OF FENCING REQUIRED.
- ANY ADDITIONAL TREES REQUIRED FOR REMOVAL FOR CONSTRUCTION PROCESSES, UTILITY INSTALLATIONS, ETC. THAT ARE NOT NOTED OR REFERENCED ON PLANS SHALL BE NOTED ON PLAN (8.5 X 11) WITH REASON FOR REMOVAL AND SUBMITTED TO COSL ARBORIST AND THE LANDSCAPE ARCHITECT FOR REVIEW. UPON APPROVAL OF SUBJECT TREE'S REMOVAL BY COSL ARBORIST SUCH TREE CAN BE REMOVED IN MANNER DEEMED APPROPRIATE. CONTRACTOR TO ALLOW MIN. FIVE (5) WORKING DAYS FOR SUCH NOTED APPROVAL.

**DEMOLITION NOTES:**

- CONTRACTOR SHALL DEMOLISH ALL ITEMS NECESSARY TO INSTALL NEW WORK PER PLANS AND SPECIFICATIONS. DEMOLITION WORK SHALL INCLUDE BUT NOT BE LIMITED TO ITEMS INDICATED BY REFERENCED NOTES AND SYMBOLS ON THE DEMOLITION PLANS.
- CONTRACTOR SHALL VERIFY IN FIELD ALL DIMENSIONS AND ITEMS TO BE REMOVED. PROMPTLY NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OF ANY DISCREPANCIES.
- REFER TO SPECIFICATIONS SECTION 024119 FOR GENERAL DEMOLITION REQUIREMENTS.
- INSTALL TEMPORARY BARRIERS TO SEPARATE CONSTRUCTION FROM OCCUPIED AREAS OR AREAS ACCESSIBLE TO PUBLIC OR OWNER EMPLOYEES. BARRIER SHALL BE DUST-TIGHT. COORDINATE DEMOLITION SCHEDULE WITH OWNER. MINIMIZE DISRUPTIONS FROM SOUND OR CONSTRUCTION EQUIPMENT AND PERSONNEL TO OCCUPIED AREAS.
- FOR ALL EXISTING PLUMBING - IRRIGATION AND DRAINAGE ITEMS REMOVED, DEMOLISH LINES BACK TO GRADE OR WALLS TO REMAIN, ABOVE OR BELOW FLOOR. CAP ALL LINES.

**ABBREVIATIONS:**

ADJ	ADJACENT
APPROX	APPROXIMATE
BC	BOTTOM OF CURB
BLDG	BUILDING
BR	BOTTOM OF RAMP
BS	BOTTOM OF STEP
BL	BUILDING LINE
BOC	BACK OF CURB
BW	BOTTOM OF WALL
CJ	CONTROL JOINT
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONT	CONTINUOUS
CL	CENTERLINE
DIA	DIAMETER
DWG	DRAWINGS
EFL	EAST FLOW LINE
EJ	EXPANSION JOINT
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EQ	EQUAL
EXIST	EXISTING
FG	FINISHED GRADE
FOC	FACE OF CURB
FIN	FINISH
IJ	ISOLATION JOINT
LP	LOW POINT
MAX	MAXIMUM
MIN	MINIMUM
NFL	NORTH FLOW LINE
OC	ON CENTER
PA	PLANTING AREA
PERP	PERPENDICULAR
PL	PROPERTY LINE
POB	POINT OF BEGINNING
PROP	PROPOSED
R	RADIUS
RE	REFER TO
REF	REFERENCE
REINF	REINFORCED
REQ	REQUIRED
ROW	RIGHT OF WAY
SCH	SCHEDULE
SSEJ	SUB-SURFACE EXPANSION JOINT
SEC	SECTION
SFL	SOUTH FLOW LINE
SHT	SHEET
SIM	SIMILAR
SQ	SQUARE
SWE	STATIC WATER ELEVATION
TC	TOP OF CURB
TOB	TOP OF BANK
TOS	TOE OF SLOPE
TP	TOE OF PAVING
TR	TOP OF RAMP
TS	TOP OF STEP
TW	TOP OF WALL
TY	WLAL
TYP	TYPICAL
WL	WATER LEVEL
WFL	WEST FLOW LINE

**LAYOUT & MATERIALS LEGEND**

	CENTER LINE
	ALIGN
	EXPANSION JOINT
	CONTROL OR CONSTRUCTION JOINTS
	RADIUS
	PLAN ENLARGEMENT REFERENCE
	SECTION REFERENCE
	ELEVATION REFERENCE
	DETAIL REFERENCE
	MATERIAL, KEYNOTE REFERENCE
	VEHICULAR STREET LIGHT
	PEDESTRIAN LIGHT
	ACCESSIBLE RAMP

**BENCHMARK:**

CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEOID03)

**NOTES:**

REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.

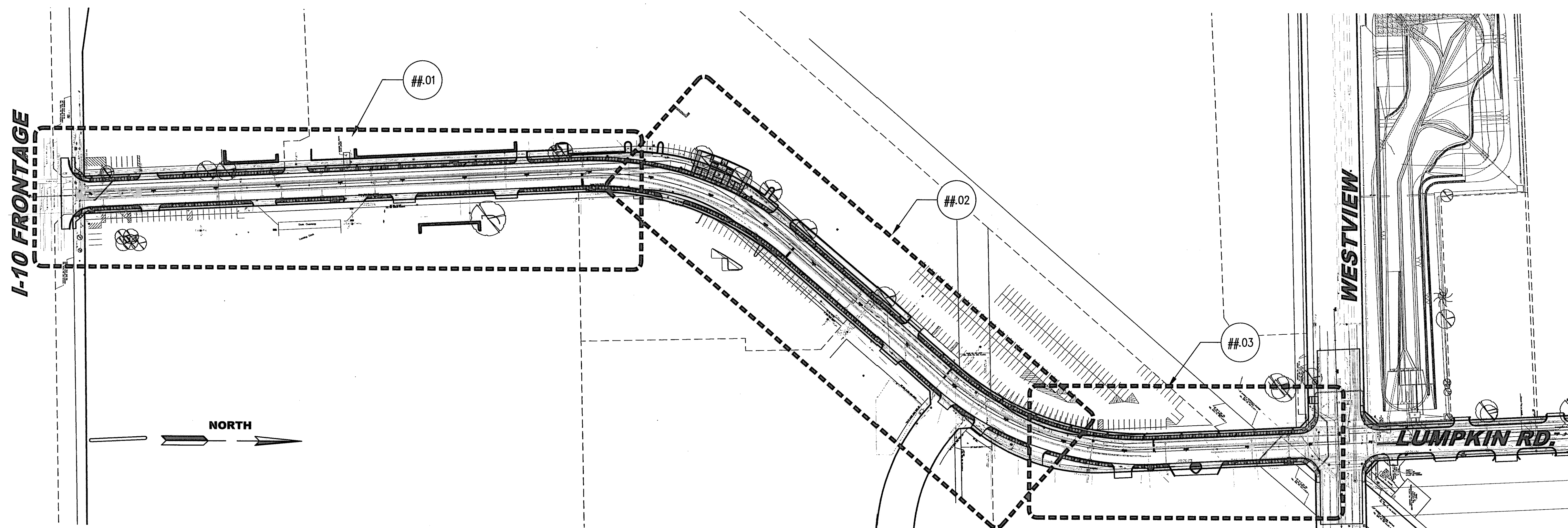
ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL

REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE

REF. 4/L5.02 FOR PLANTING SCHEDULE

ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS

EXIST. POWER POLES TO BE COORDINATED WITH CENTERPOINT ENERGY AND CIVIL



**1 KEY PLAN**  
1" = 100'-0"

1 OCTOBER 2014

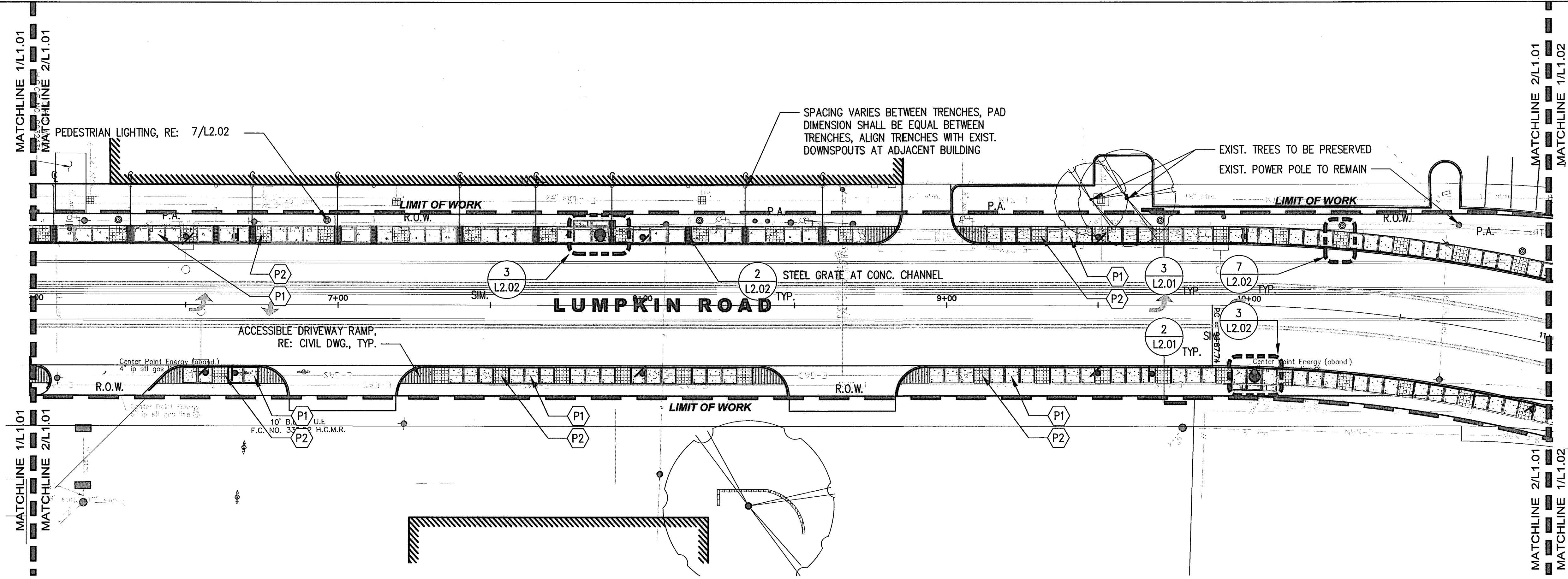
**SWA Group**  
1245 W 19th Street  
Houston, TX 77008  
www.swagroup.com

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

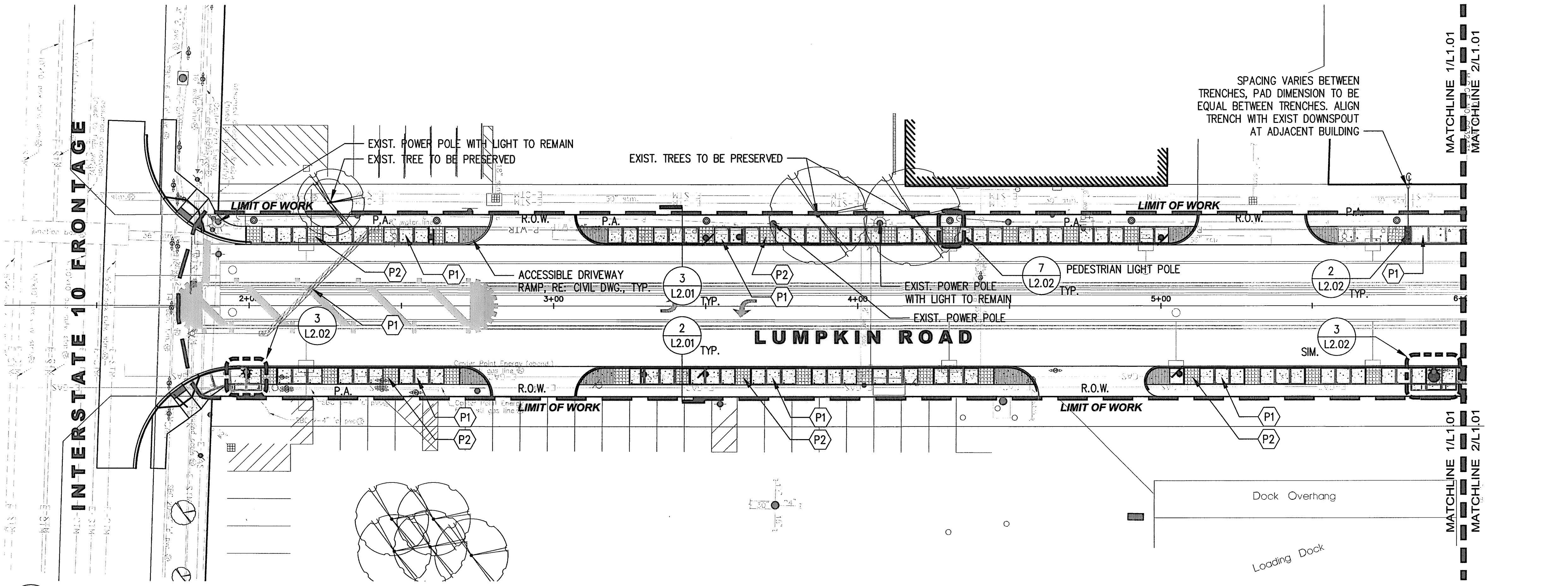
LUMPKIN ROAD  
N-T17000-0012-3  
LANDSCAPE NOTES AND LEGEND  
L0.00

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWO
FILE NO.:		FACILITY
DRAWING SCALE:		CITY DWG NO.
VERT:		
HORZ: 1"=20'		
SHEET:		
171		OF 226

APP. REVISIONS No. DATE No. DATE  
 14\_10-01 04-32  
 C:\E\141001\141001.dwg  
 \\HOU1F5801\DATA\Project\RH\RH\TS401 Memorial W04 Lumpkin CD\4 Drawings\Graphics\AutoCAD\Sheets\L0.00 LANDSCAPE NOTES AND LEGEND.dwg



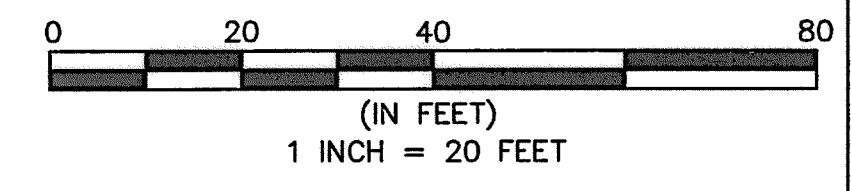
2 LAYOUT & MATERIAL PLAN  
1" = 20'



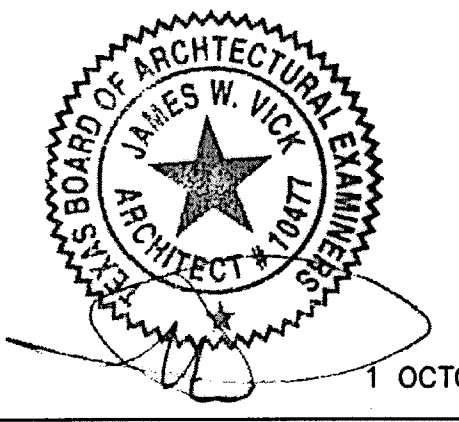
1 LAYOUT & MATERIAL PLAN  
1" = 20'

**BENCHMARK:**  
CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEOID03)

**NOTES:**  
REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.  
ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL  
REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE  
REF. 4/L5.02 FOR PLANTING SCHEDULE  
ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS  
EXIST. POWER POLES TO BE COORDINATED WITH CENTERPOINT ENERGY AND CIVIL



NO.	DATE	REVISIONS	APP.



1 OCTOBER 2014

SWA Group  
1245 W 18th Street  
Houston, TX 77008  
www.swagroup.com

**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

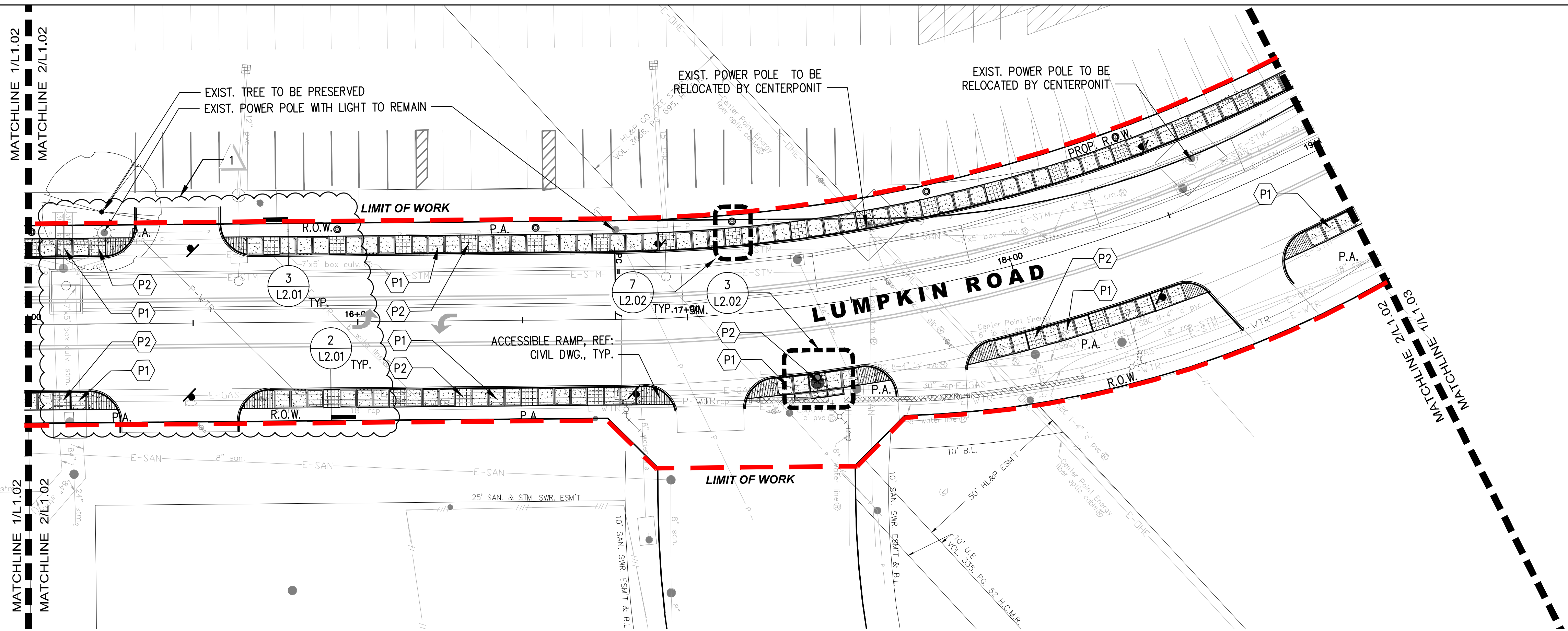
LUMPKIN ROAD  
N-T17000-0012-3  
LAYOUT & MATERIAL PLAN  
1+00 TO 11+00  
L1.01

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SW

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: HORZ: 1"=20'	
SHEET: 172 OF 226	

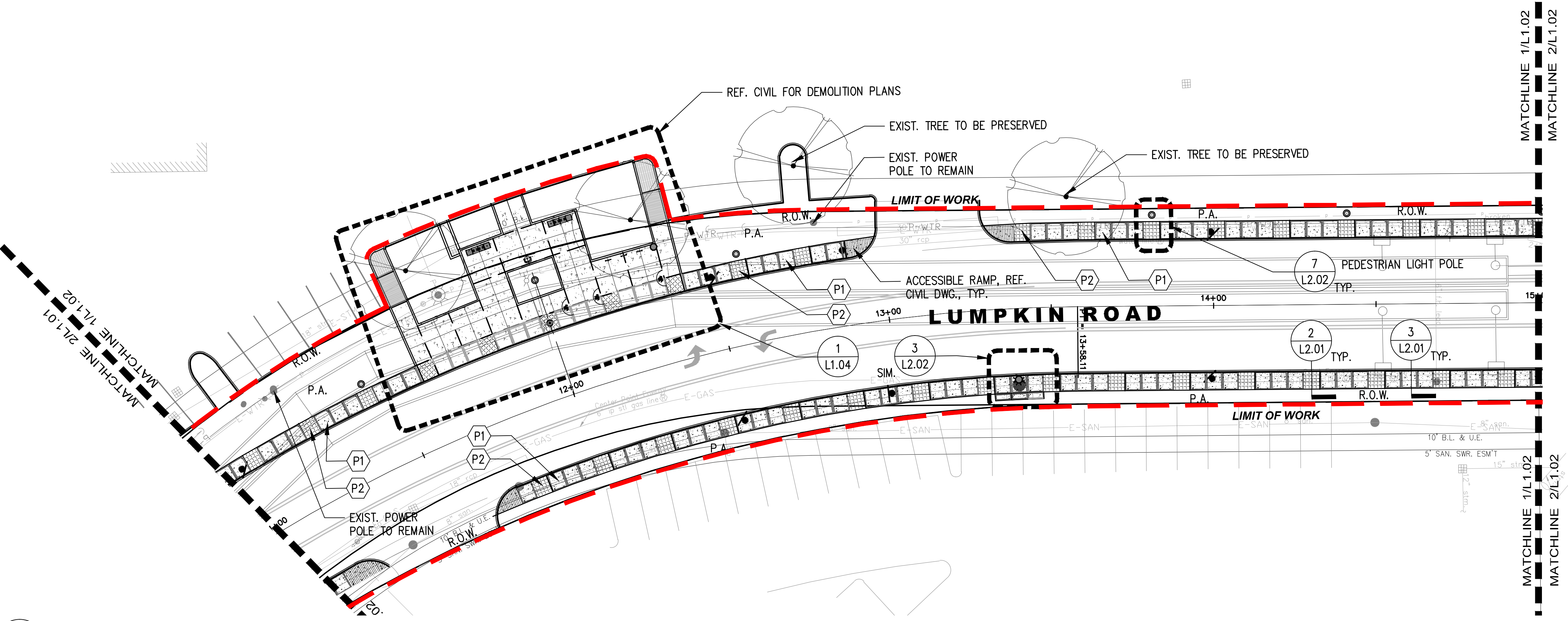
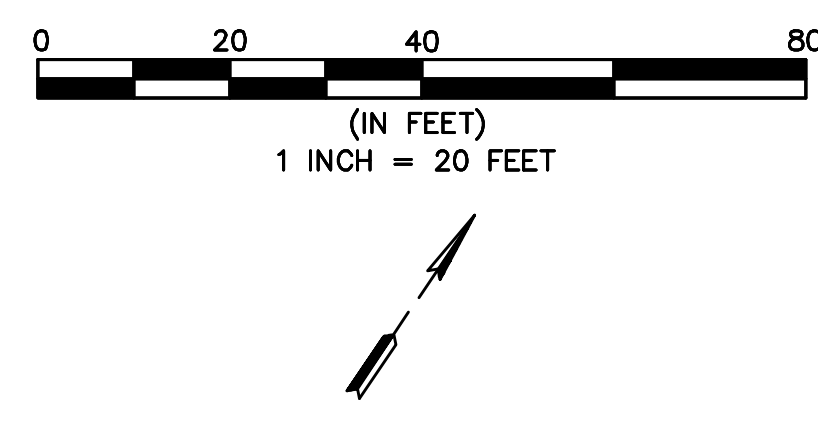
14\_10-01 04:32 CGENTILE  
 \\HOU1FS801\DATA\Project\RHT\RH7S401 Memorial W04 Lumin. CD\4 Drawings\Graphics\AutoCAD Sheets\L1\L1.01 LAYOUT & MATERIAL PLAN.dwg



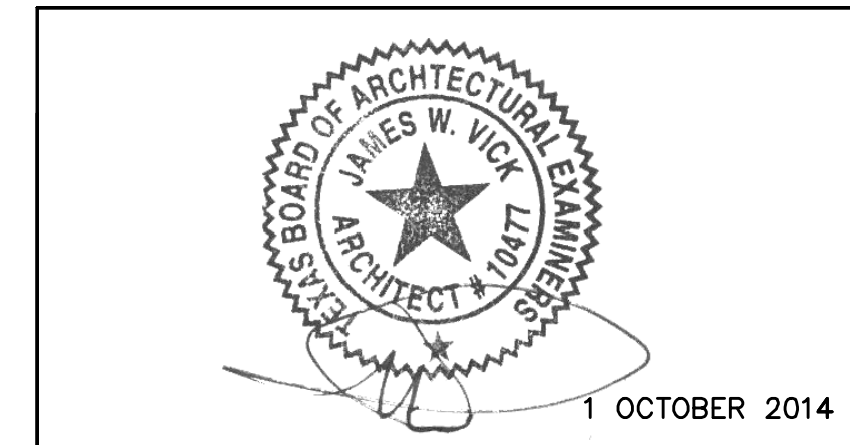
2 LAYOUT & MATERIAL PLAN  
1" = 20'

**BENCHMARK:**  
CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEIOD03)

**NOTES:**  
REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.  
ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL  
REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE  
REF. 4/L5.02 FOR PLANTING SCHEDULE  
ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS  
EXIST. POWER POLES TO BE COORDINATED WITH CENTERPOINT ENERGY AND CIVIL



1 LAYOUT & MATERIAL PLAN  
1" = 20'



SWA Group  
1245 W 18th Street  
Houston, TX 77008  
www.swagroup.com

**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
LAYOUT & MATERIAL PLAN  
12+00 TO 19+00  
L1.02

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: HORIZ: 1"=20'	
SHEET: 173 OF 226	

**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEOID03)

**NOTES:**  
 REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.

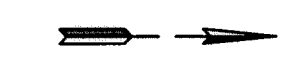
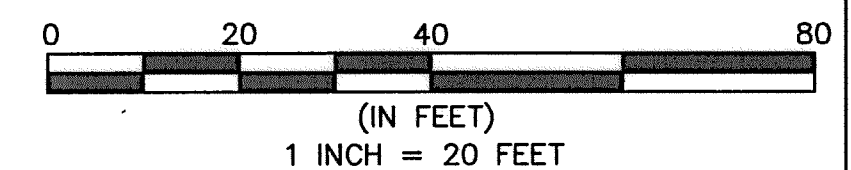
ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL

REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE

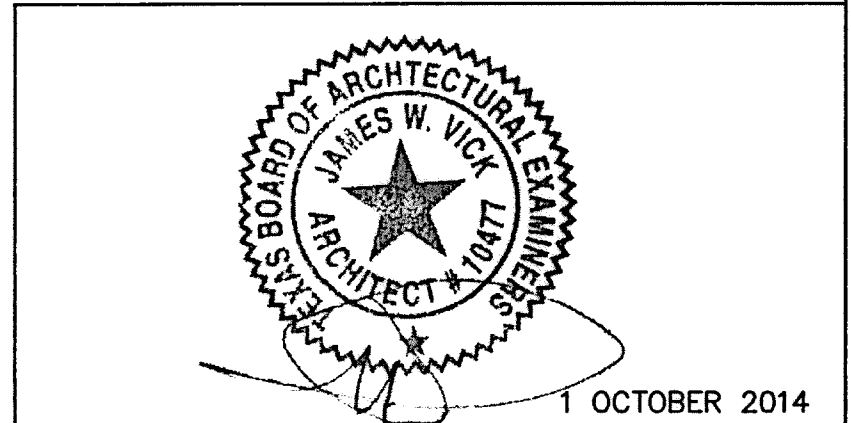
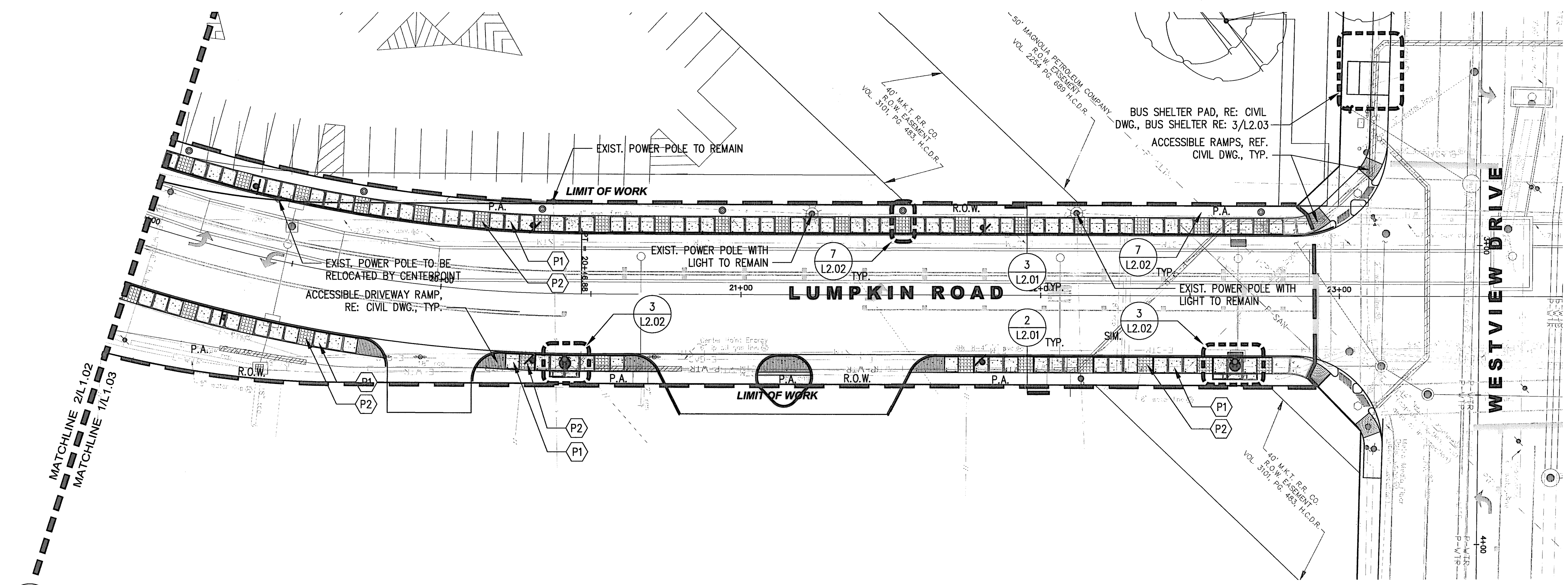
REF. 4/L5.02 FOR PLANTING SCHEDULE

ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS

EXIST. POWER POLES TO BE COORDINATED WITH CENTERPOINT ENERGY AND CIVIL



APP. REVISIONS DATE No. DATE  
 14\_10-01 04:33  
 C:\HOU\FS801\DATA\Project\RHT\RH19401 Memorial W04 Lumpkin CD\4 Drawings\Graphics\AutoCAD Sheets\L1\L1.03 LAYOUT & MATERIAL PLAN.dwg



SWA Group  
 1245 W 18th Street  
 Houston, TX 77008  
 www.swagroup.com

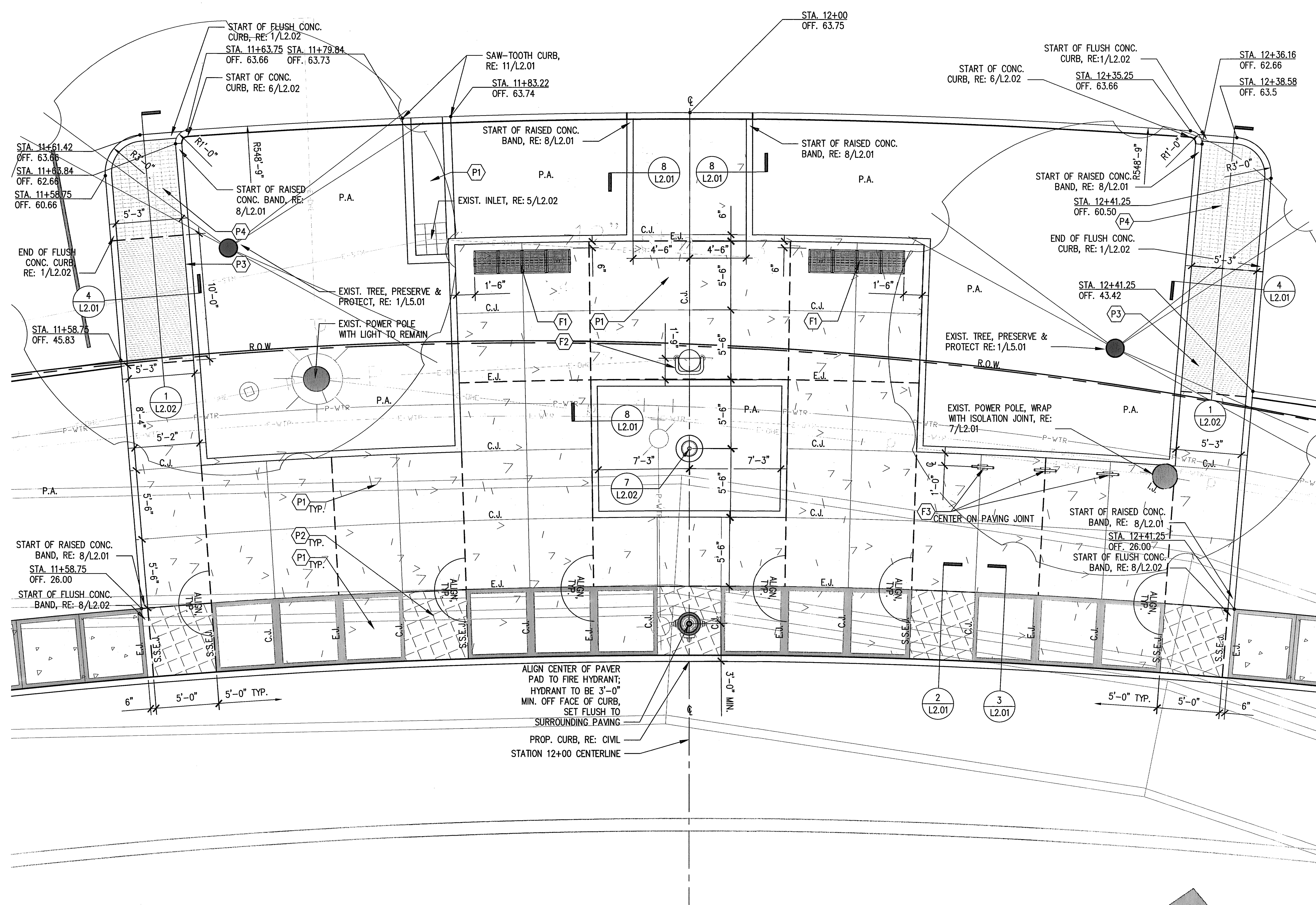
**lan** Lockwood, Andrews & Newnam, Inc.  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 LAYOUT & MATERIAL PLAN  
 19+00 TO 23+50  
 L1.03

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SW

FILE NO.:	FACILITY
DRAWING SCALE:	QTY DWG NO.
VERT: HORZ: 1"=20'	
SHEET: 174 OF 226	

**1** LAYOUT & MATERIAL PLAN  
 1" = 20'



**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV.=82.18 FEET (NAVD 88\GEOID03)

**NOTES:**  
 REFER TO CIVIL FOR REPAIR OF DISTURBED  
 AREAS.

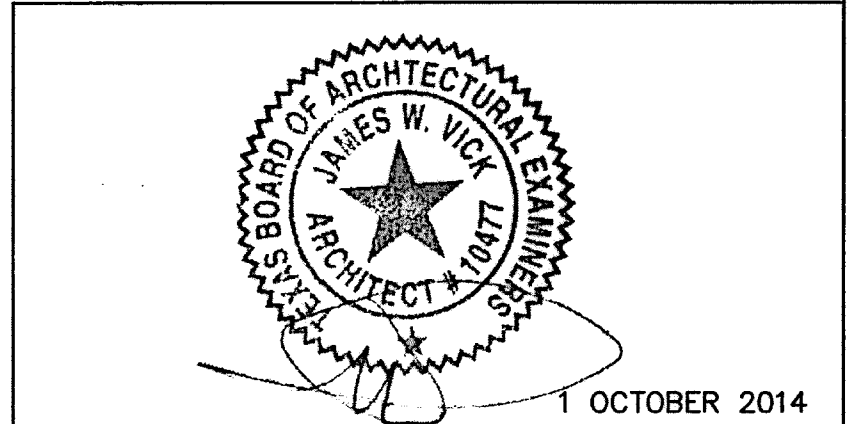
ONLY SIDEWALK CONC. TO RECEIVE 4"  
 SMOOTH TROWEL BOARDER. ALL OTHER CONC.  
 SHALL RECEIVE MED. BROOM FINISH  
 PERPENDICULAR TO DIRECTION OF TRAVEL

REF. 4/L2.02 FOR MATERIAL AND FURNISHING  
 SCHEDULE

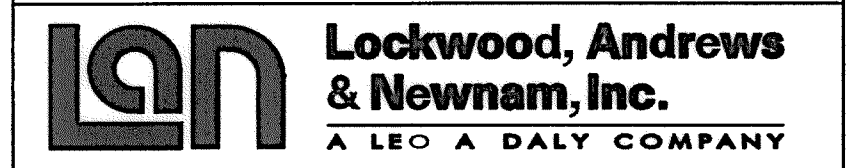
REF. 4/L5.02 FOR PLANTING SCHEDULE

ALIGN PAVING JOINTS TO EDGE OF PAVEMENT,  
 RAISED CONC. BAND, EXIST. JOINTS, AND  
 PAVERS

EXIST. POWER POLES TO BE COORDINATED  
 WITH CENTERPOINT ENERGY AND CIVIL



SWA Group  
 1245 W 18th Street  
 Houston, TX 77008  
 www.swagroup.com



LUMPKIN ROAD  
 N-T17000-0012-3  
 ENLARGEMENT PLAN  
 LAYOUT & MATERIALS  
 12+00  
 L1.04

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: HORZ: 1"=20'	
SHEET: 175 OF 226	

**1 LAYOUT & MATERIAL PLAN ENLARGEMENT**  
 1/4" = 1'-0"

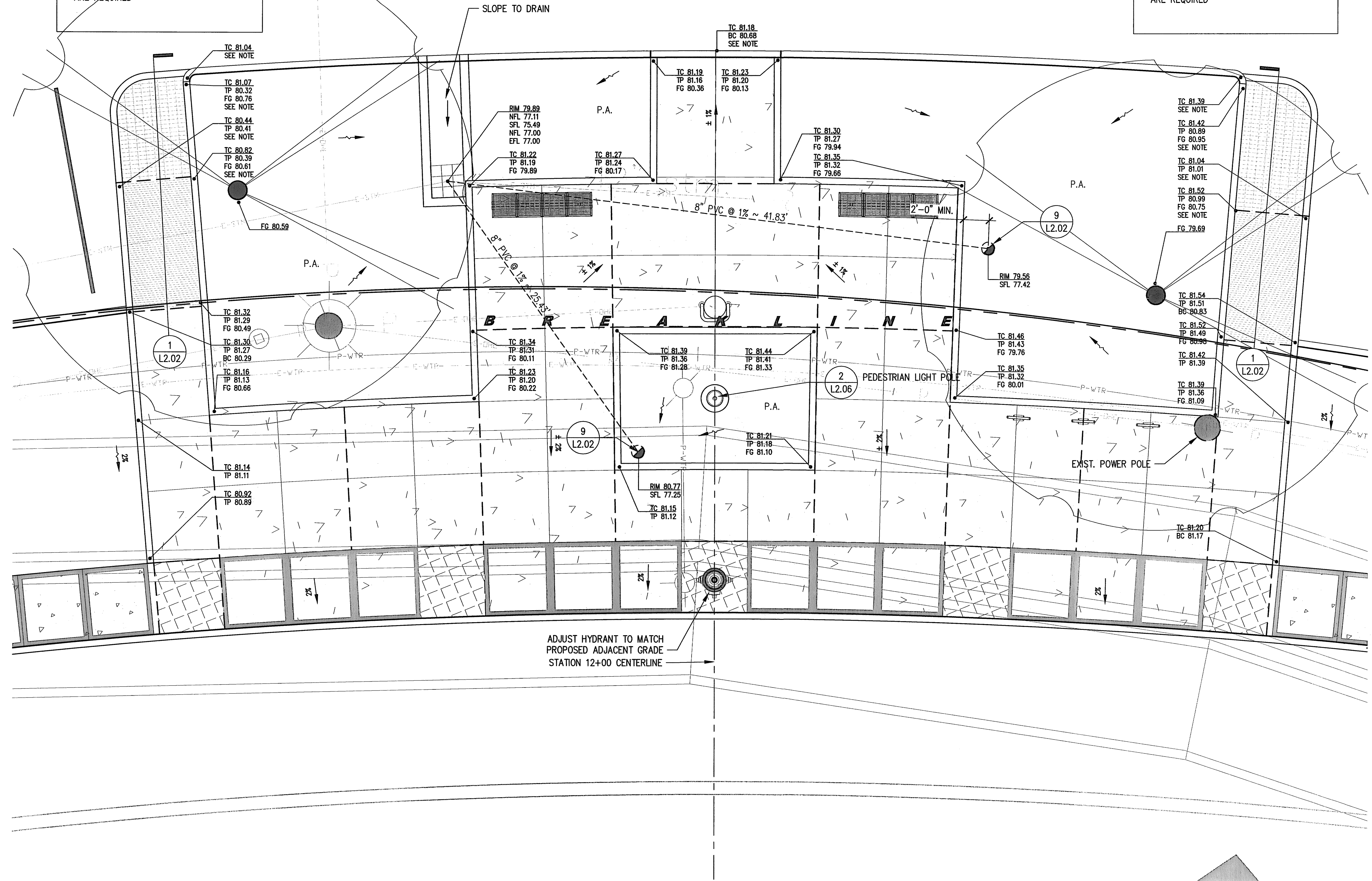
APP. \_\_\_\_\_  
 REVISIONS \_\_\_\_\_  
 DATE \_\_\_\_\_  
 No. \_\_\_\_\_  
 CGENTILE  
 04:33  
 14\_10-01  
 \\Houston01\data\Project\RHT\RHTS401 Memorial W04 Lumkin CD\4 Drawings\Graphics\AutoCAD\Sheets\L1\L1.04 ENLARGEMENT PLAN LAYOUT & MATERIALS.dwg

NOTE:  
 1. TOP OF CURB OUTSIDE OF R.O.W. TO BE 6" ABOVE EXISTING GRADE, REF. 6/L2.02  
 2. CONTRACTOR TO VERIFY EXISTING GRADES TO ENSURE PROPER DRAINAGE, REF. 1/L2.02  
 3. NOTIFY LANDSCAPE ARCHITECT IF CHANGES ARE REQUIRED

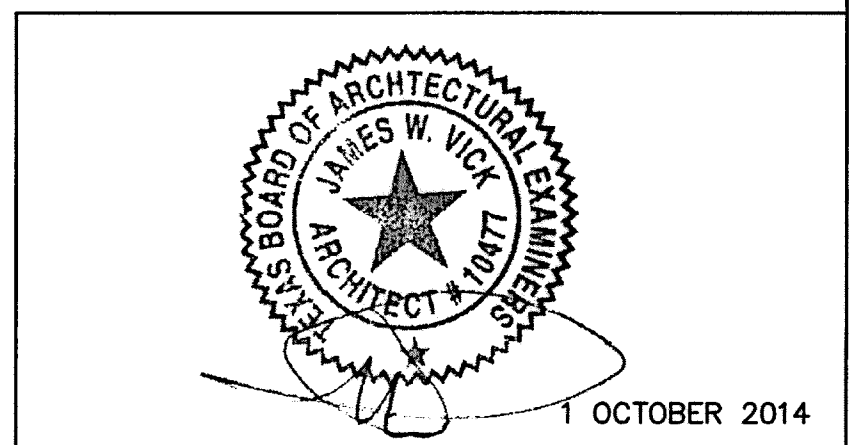
NOTE:  
 1. TOP OF CURB OUTSIDE OF R.O.W. TO BE 6" ABOVE EXISTING GRADE, REF. 6/L2.02  
 2. CONTRACTOR TO VERIFY EXISTING GRADES TO ENSURE PROPER DRAINAGE, REF. 1/L2.02  
 3. NOTIFY LANDSCAPE ARCHITECT IF CHANGES ARE REQUIRED

BENCHMARK:  
 CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEOID03)

NOTES:  
 REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.  
 ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL  
 REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE  
 REF. 4/L5.02 FOR PLANTING SCHEDULE  
 ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS  
 EXIST. POWER POLES TO BE COORDINATED WITH CENTERPOINT ENERGY AND CIVIL



1 LAYOUT & MATERIAL PLAN ENLARGEMENT  
 1/4" = 1'-0"



SWA Group  
 1245 W 18th Street  
 Houston, TX 77008  
 www.swagroup.com

**LAN Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

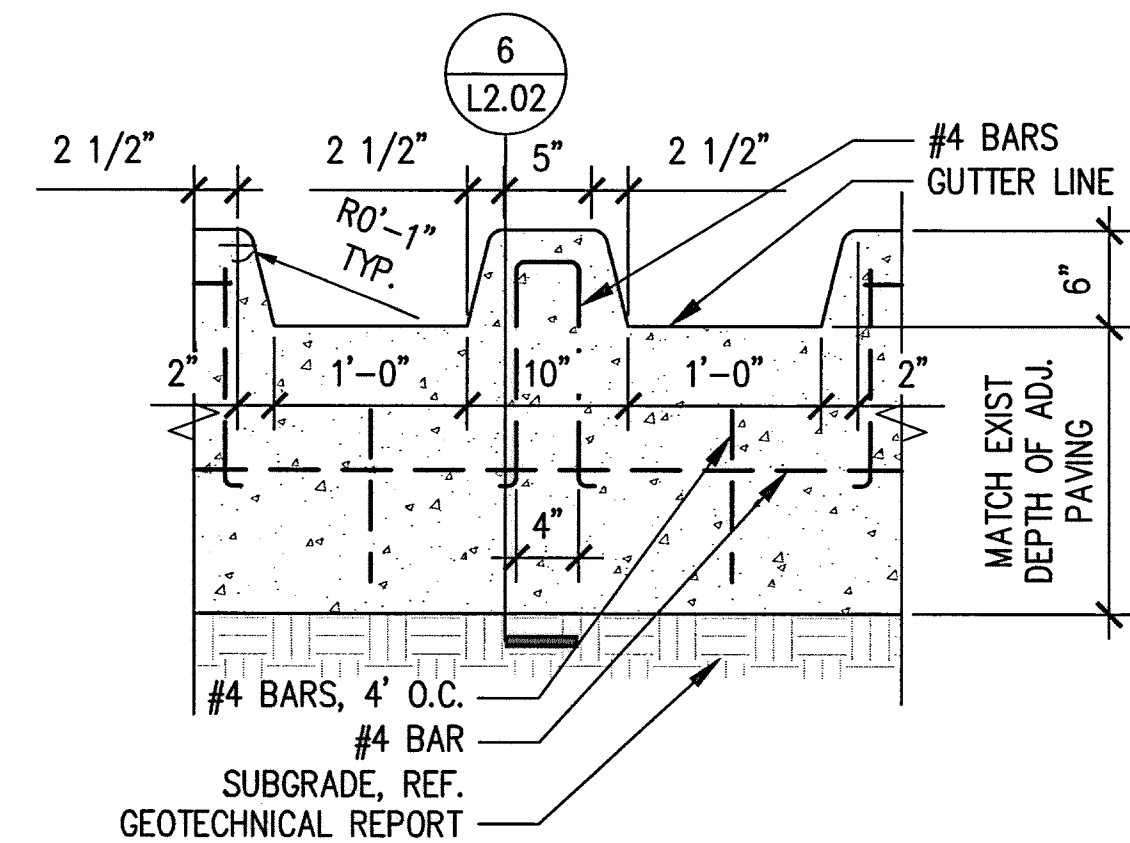
LUMPKIN ROAD  
 N-T17000-0012-3  
 ENLARGMENT PLAN GRADING & DRAINAGE  
 12+00  
 L1.05

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

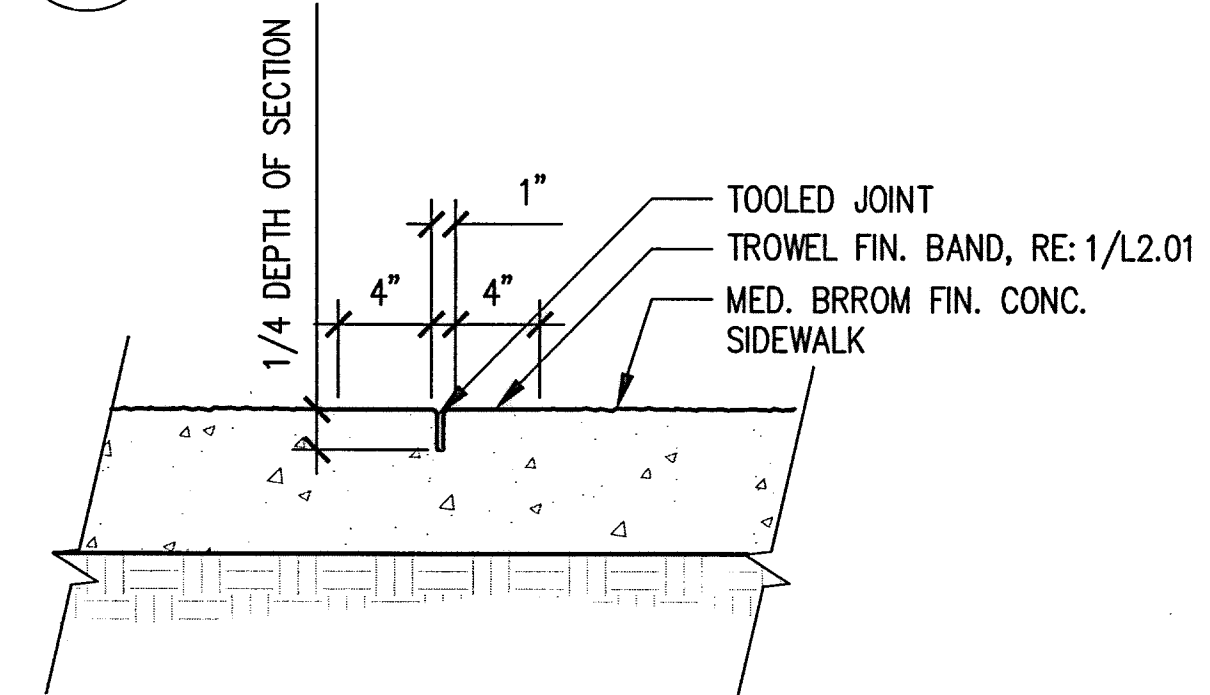
FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: HORZ: 1"=20'	
SHEET: 176 OF 226	

APP. REVISIONS No. DATE  
 04-33 14\_10-01  
 C:\Hou\ts601\data\Project\RHT\RH\TS401 Memorial W04 Lumkin CD\4 Drawings\Graphics\AutoCAD\Sheets\L1\L1.05 ENLARGMENT PLAN GRADING & DRAINAGE.dwg

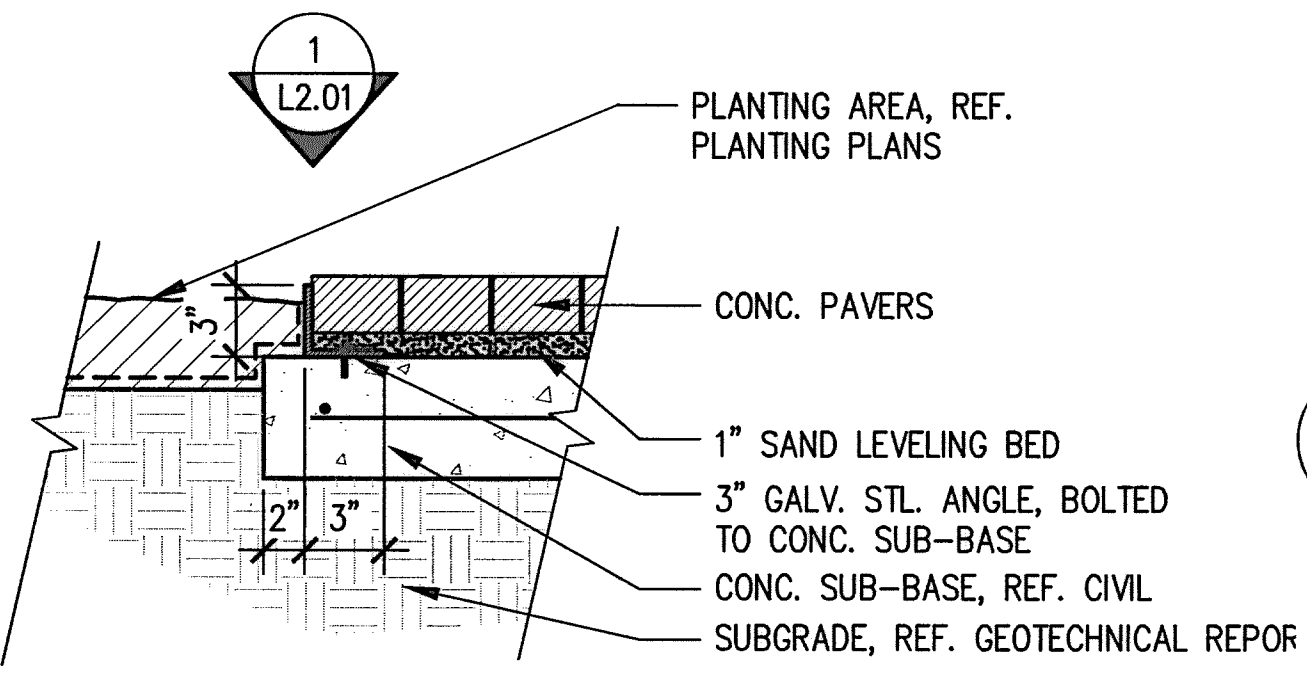




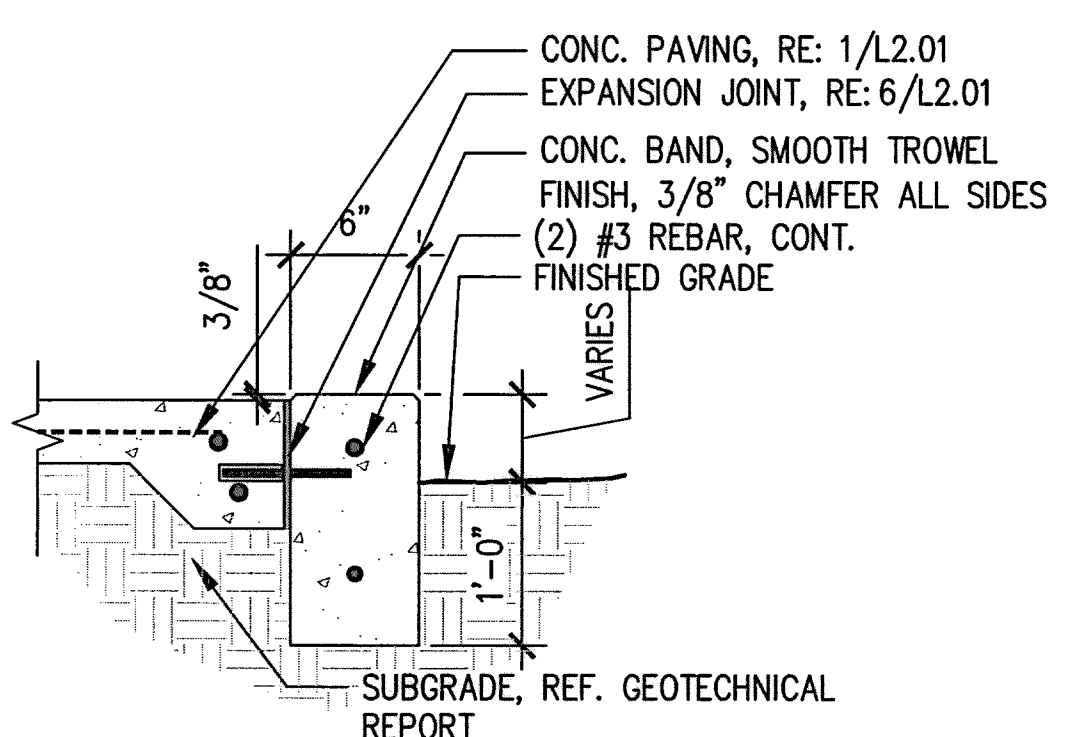
11 SAW TOOTH CURB DETAIL  
1" = 1'-0"



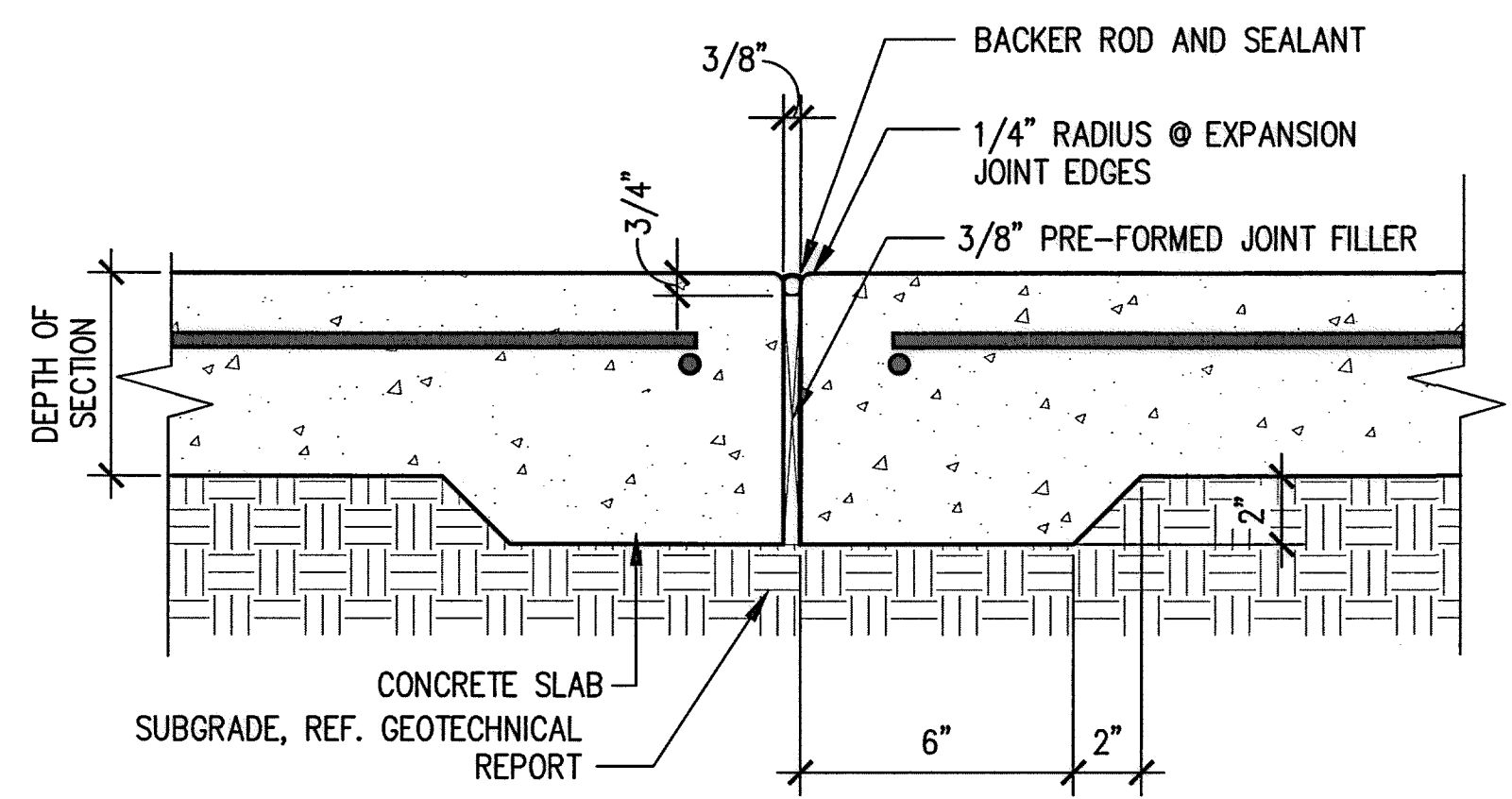
10 TYPICAL CONTROL JOINT - SECTION  
1 1/2" = 1'-0"



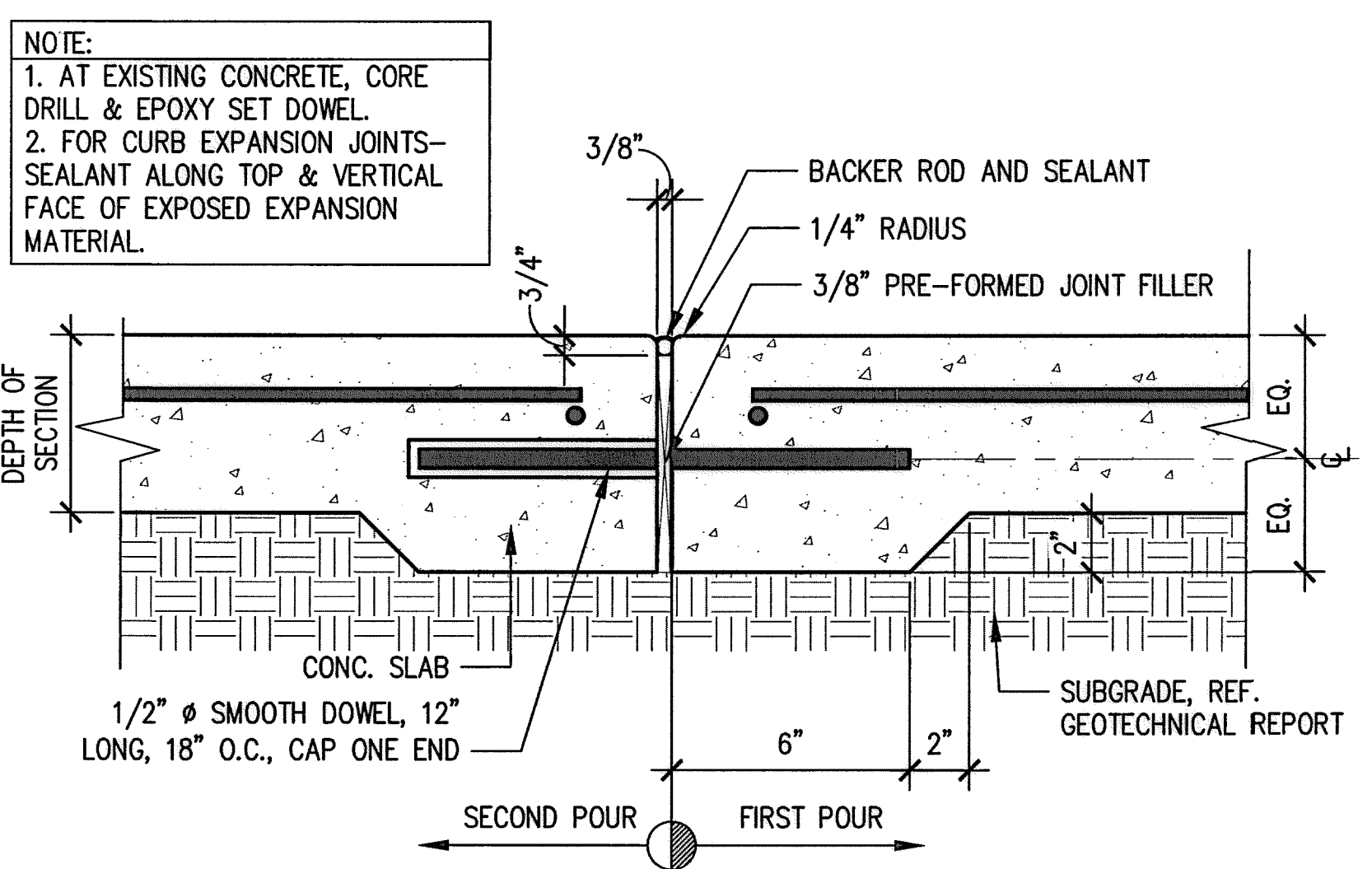
9 CONC. PAVER RESTRAINT - SECTION  
1 1/2" = 1'-0"



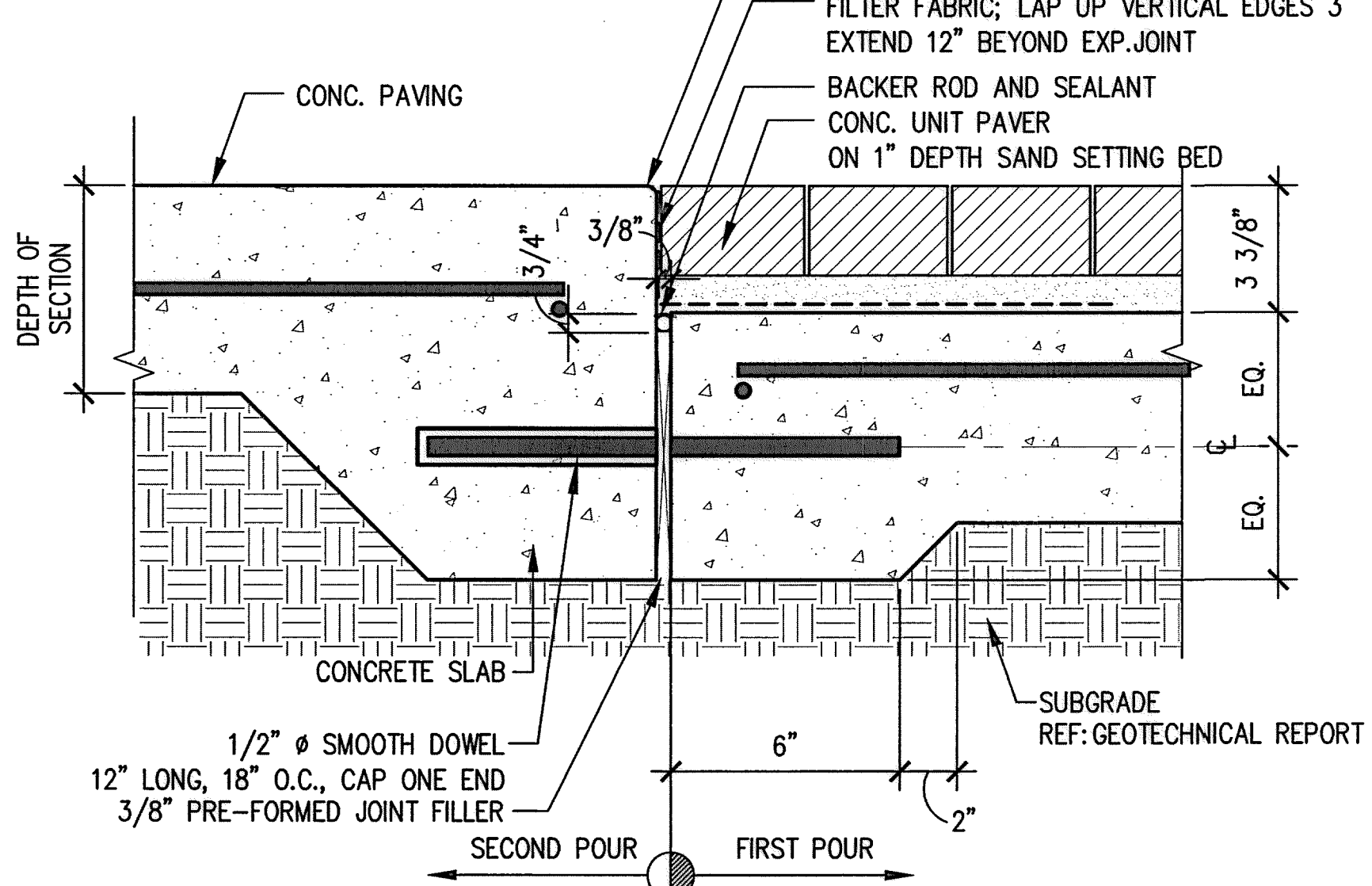
8 RAISED CONCRETE BAND - SECTION  
1" = 1'-0"



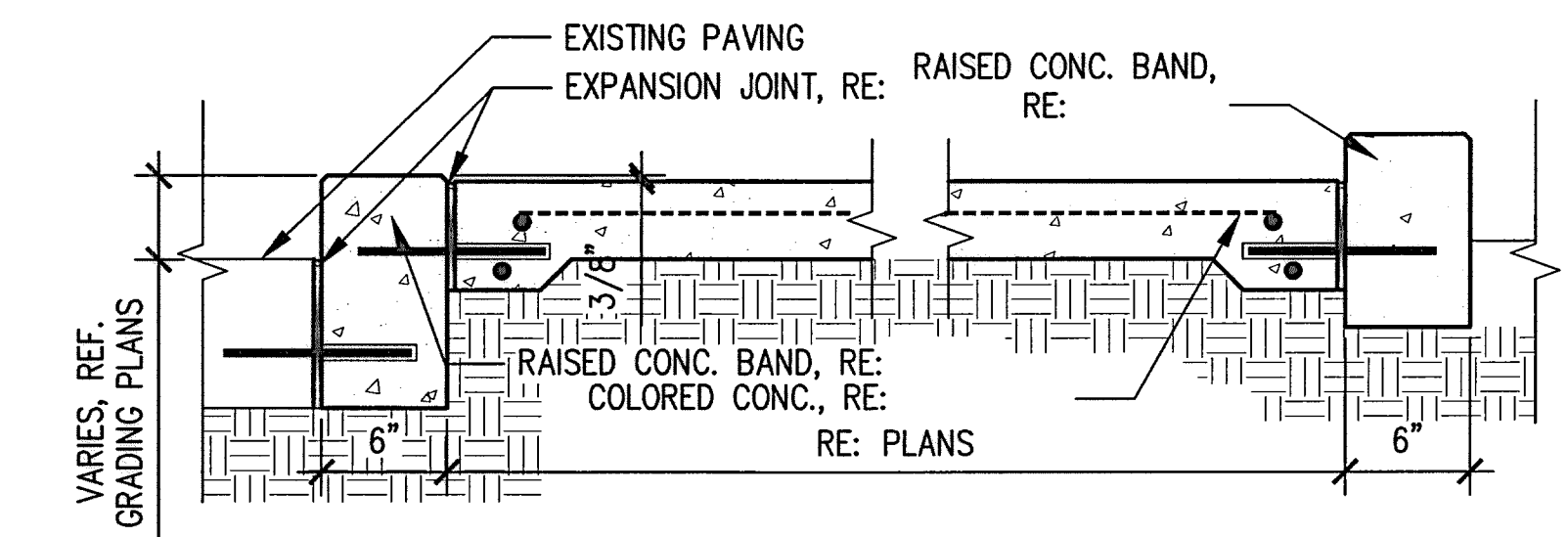
7 ISOLATION JOINT - SECTION  
3" = 1'-0"



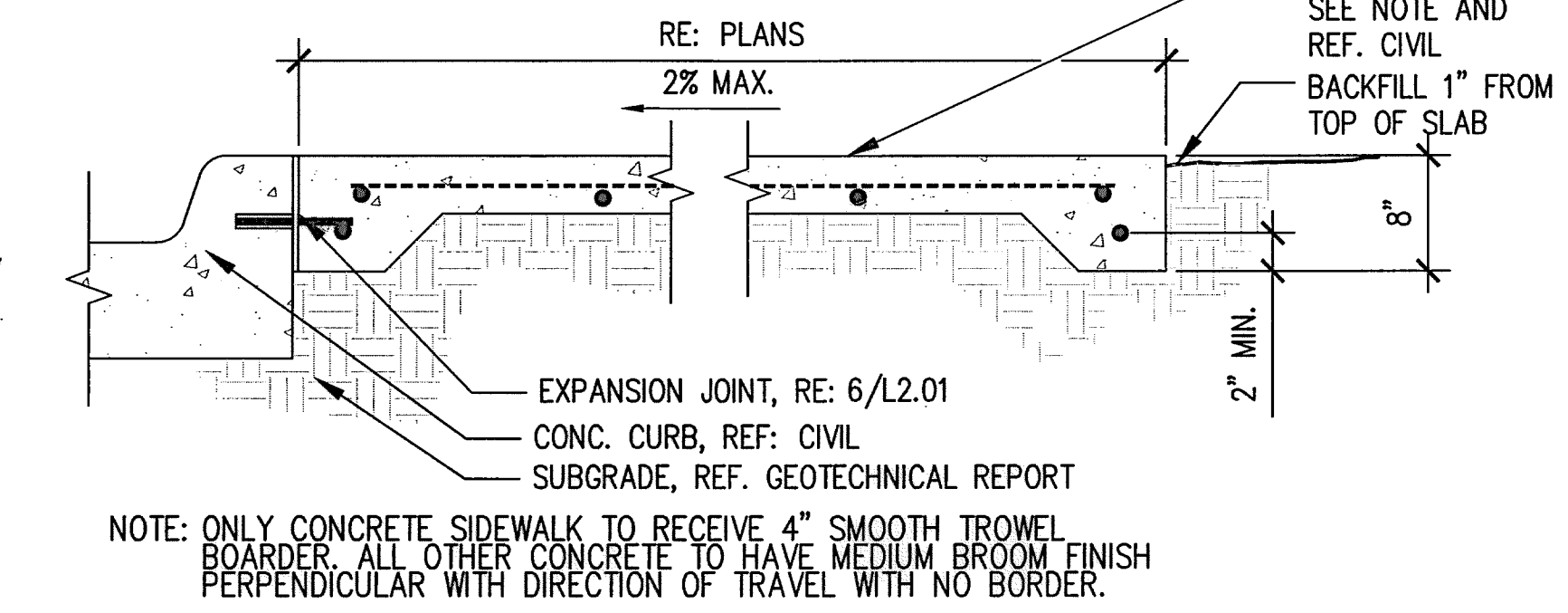
6 TYPICAL EXPANSION JOINT - SECTION  
3" = 1'-0"



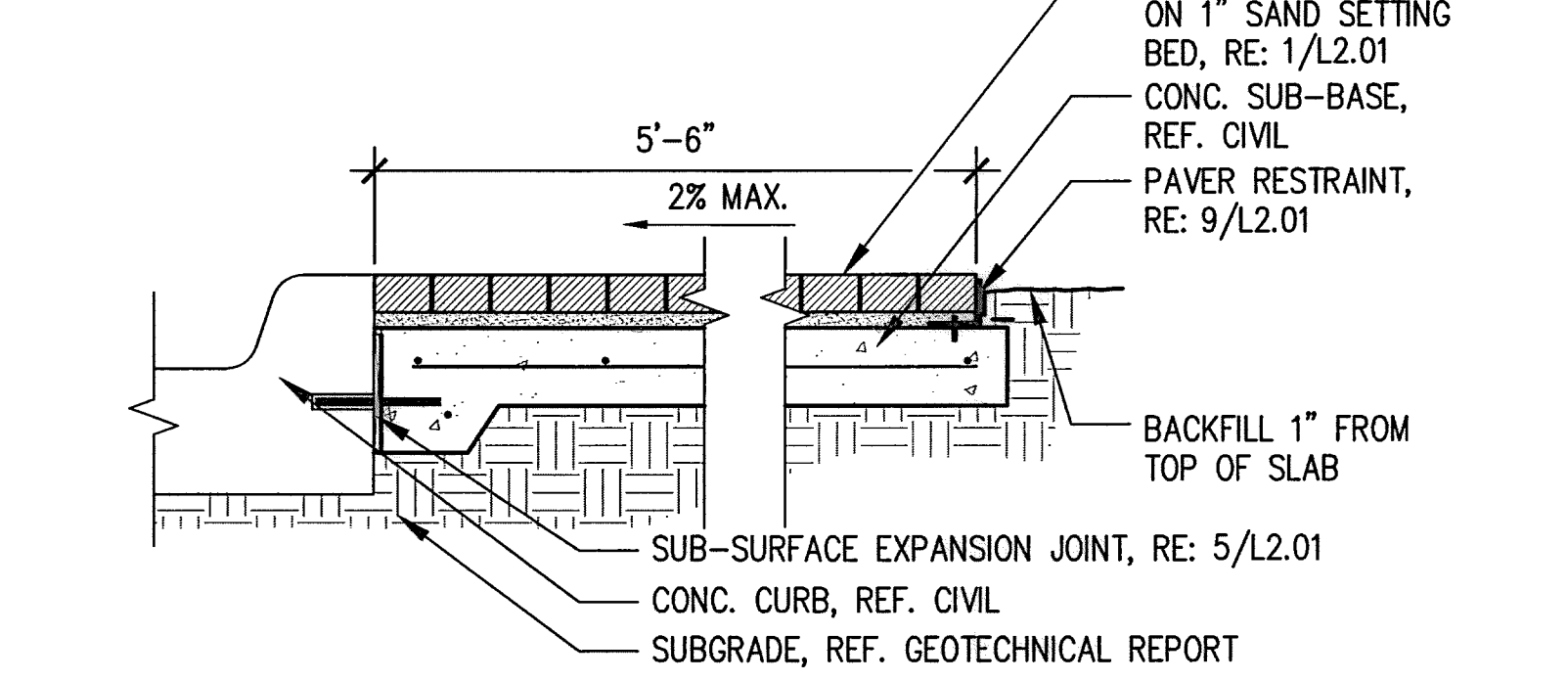
5 SUB-SURFACE EXPANSION JOINT - SECTION  
3" = 1'-0"



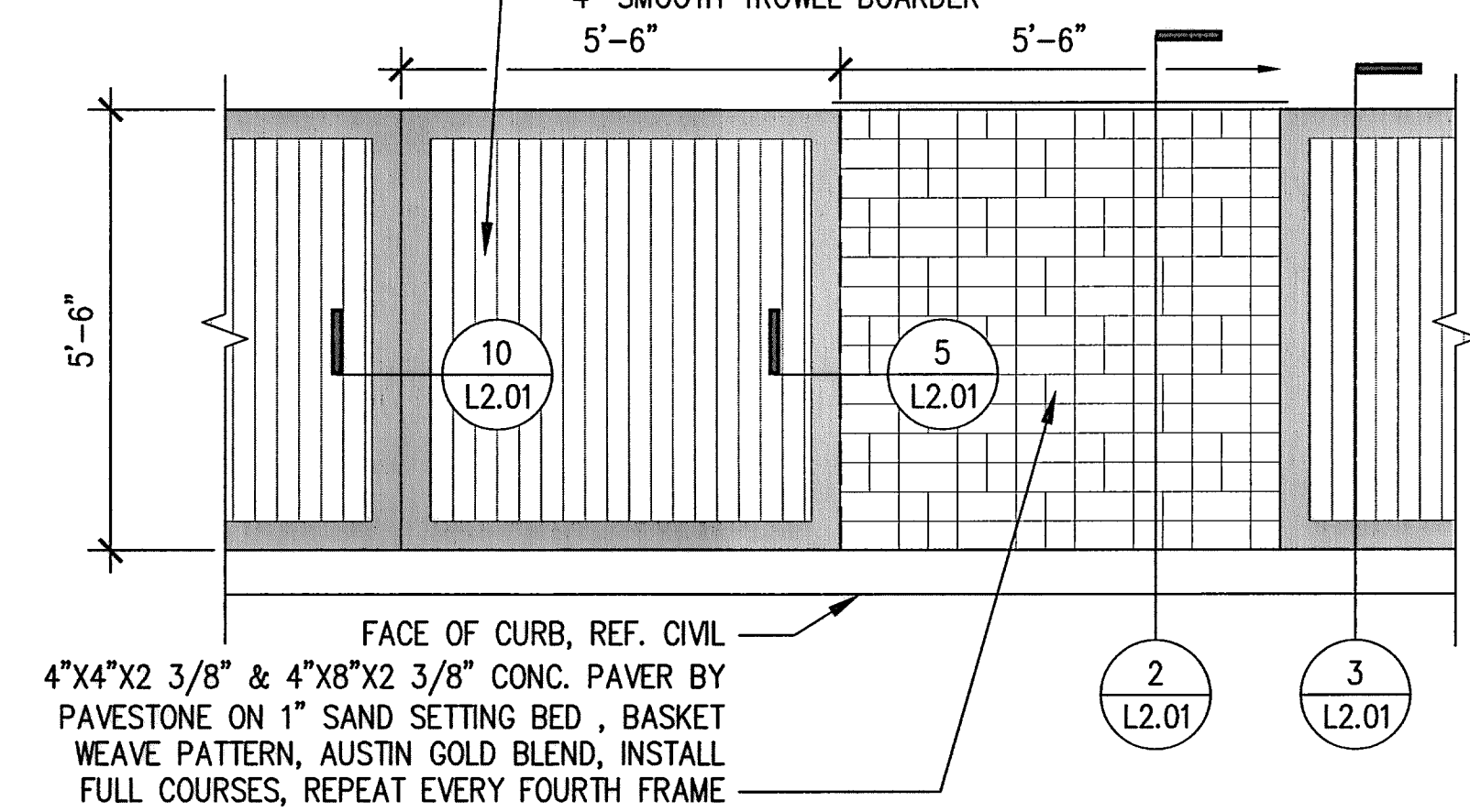
4 ACCESSIBLE RAMP - SECTION  
1" = 1'-0"



3 TYPICAL CONCRETE PAVING - SECTION  
1" = 1'-0"



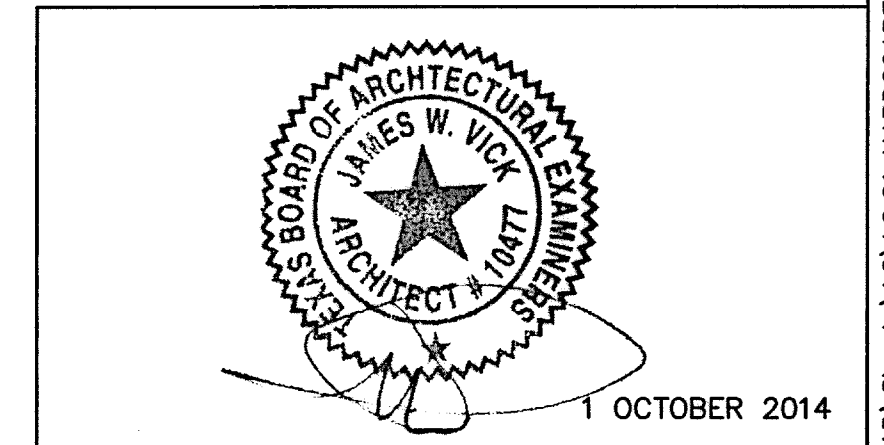
2 CONC. PAVER IN CONCRETE - SECTION  
1" = 1'-0"



1 TYPICAL CONCRETE PAVING - PLAN  
1/2" = 1'-0"

**BENCHMARK:**  
CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEIOD3)

**NOTES:**  
REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.  
ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL  
REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE  
REF. 4/L5.02 FOR PLANTING SCHEDULE  
ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS  
EXIST. POWER POLES TO BE COORDINATED WITH CENTERPOINT ENERGY AND CIVIL



SWA Group  
1245 W 18th Street  
Houston, TX 77008  
www.swagroup.com

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
HARDSCAPE DETAILS  
L2.01

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

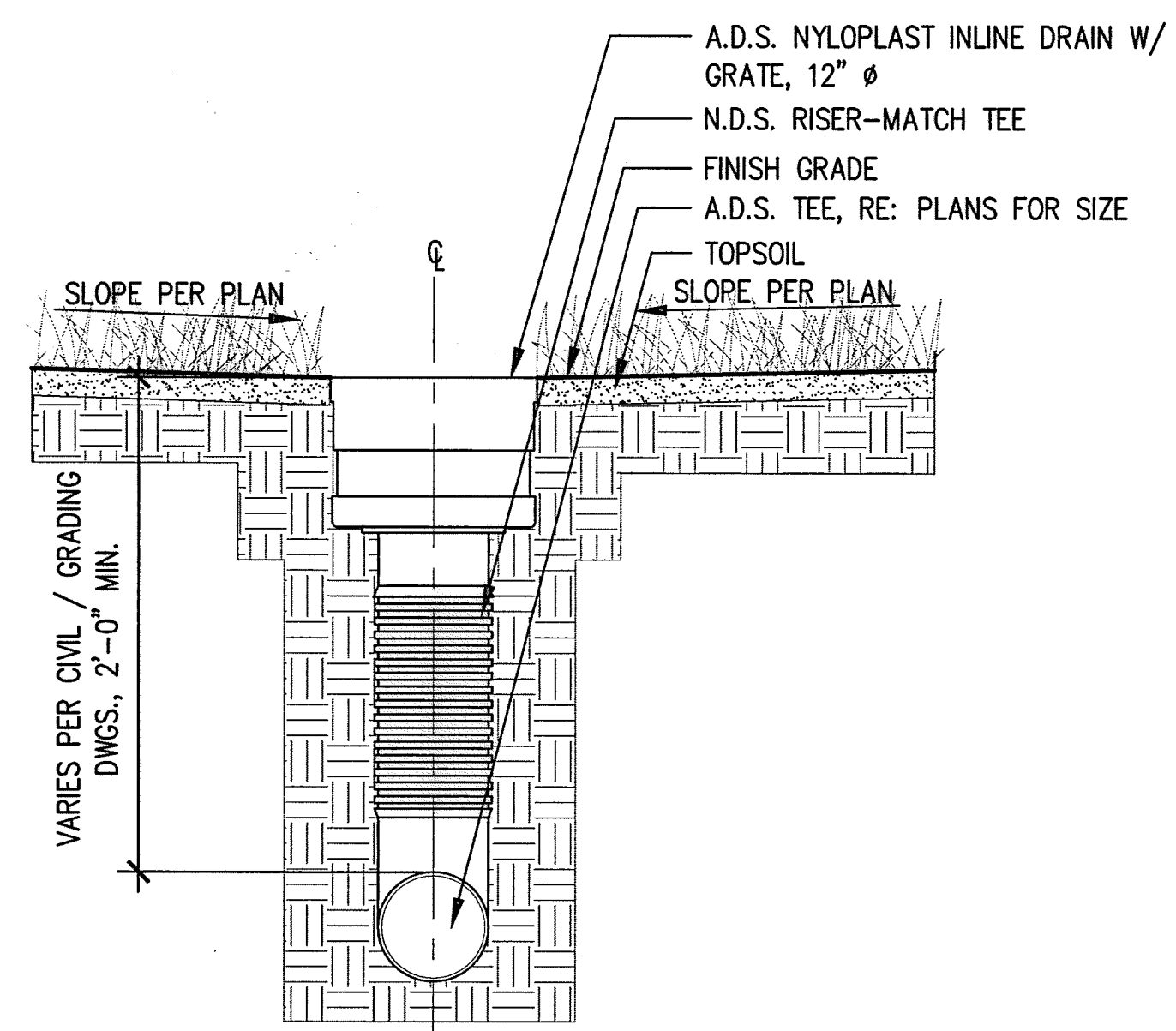
FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: 1"=20'	
SHEET: 177	OF 226

APP. REVISIONS DATE No. CGENTILE 04:34 14\_10-01 \\HOU\F5601\DATA\Project\RH\RTS401 Memorial W04 Lumpkin CD\Drawings\Graphics\AutoCAD\Sheets\L2\L2.01 HARDSCAPE DETAILS.dwg

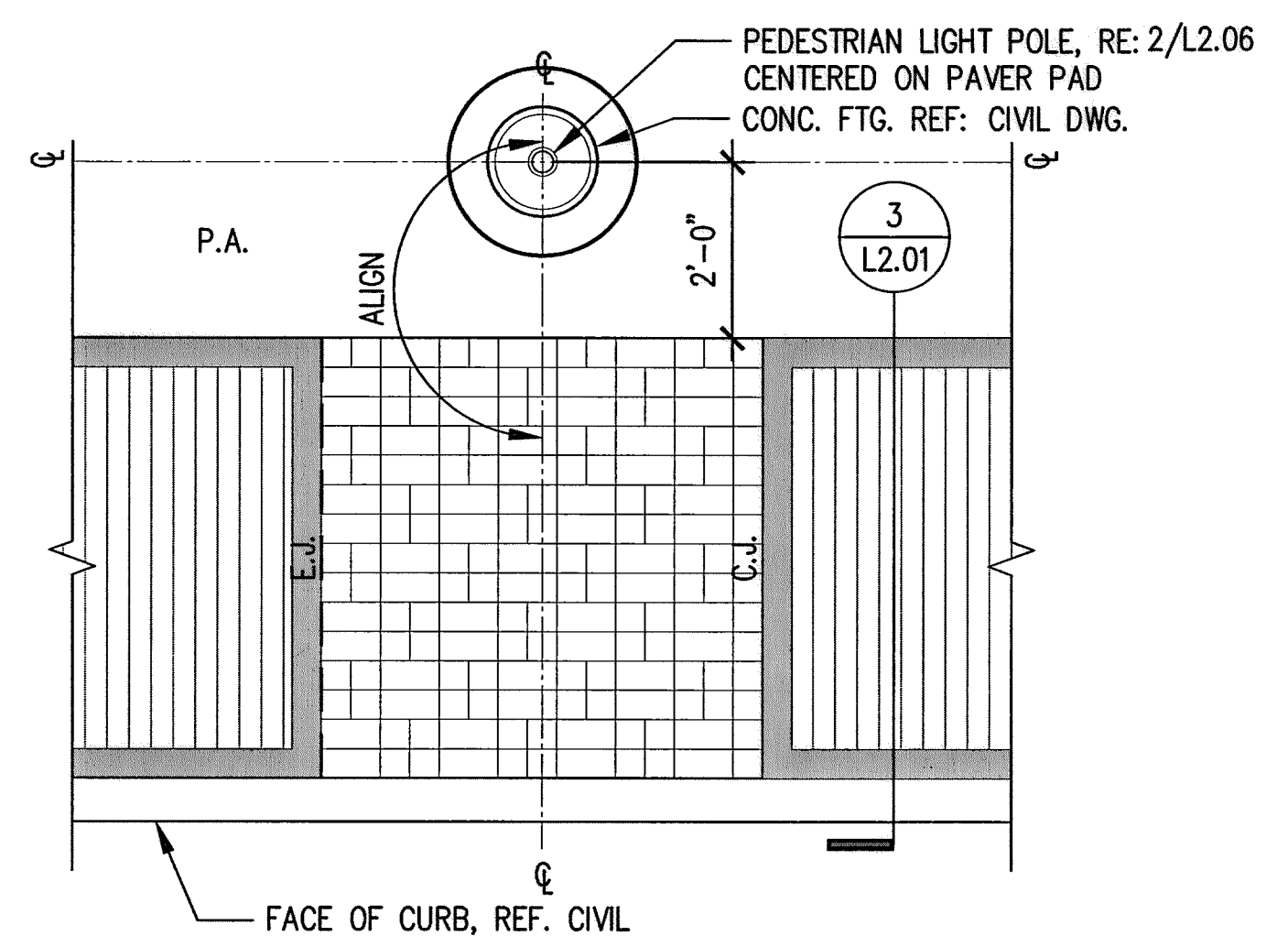
**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEOID03)

**NOTES:**  
 REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.  
 ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL  
 REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE  
 REF. 4/L5.02 FOR PLANTING SCHEDULE  
 ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS  
 EXIST. POWER POLES TO BE COORDINATED WITH CENTERPOINT ENERGY AND CIVIL

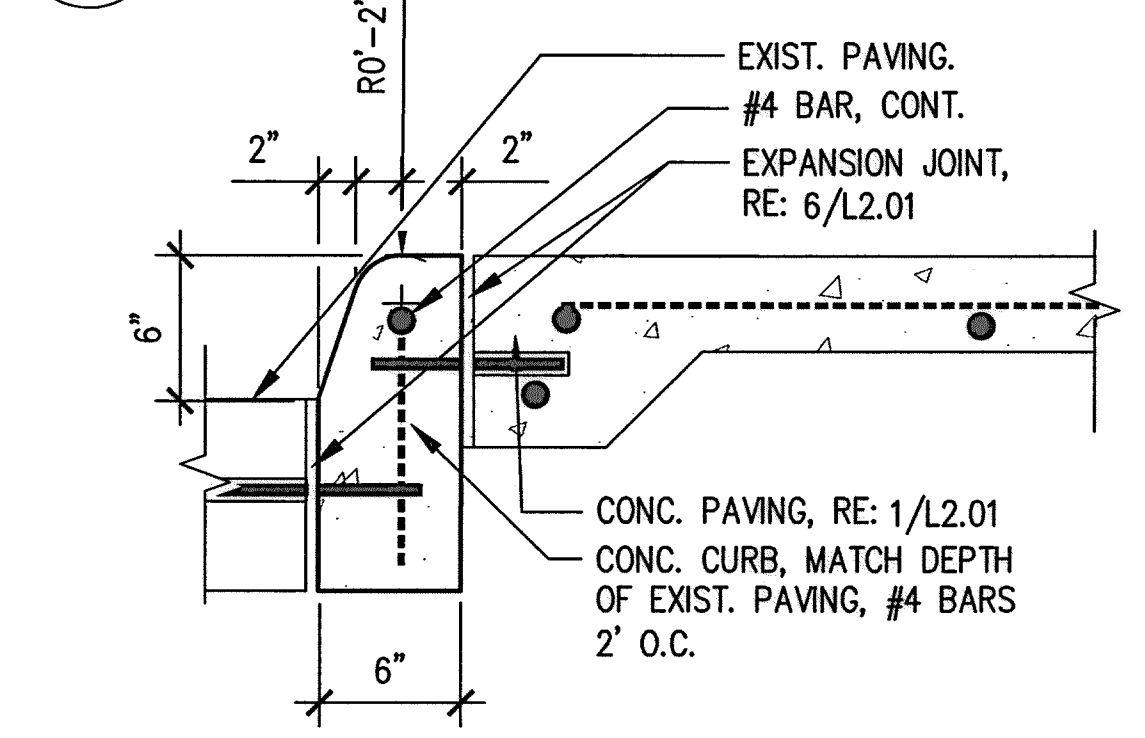
NO.	DATE	REVISIONS	APP.



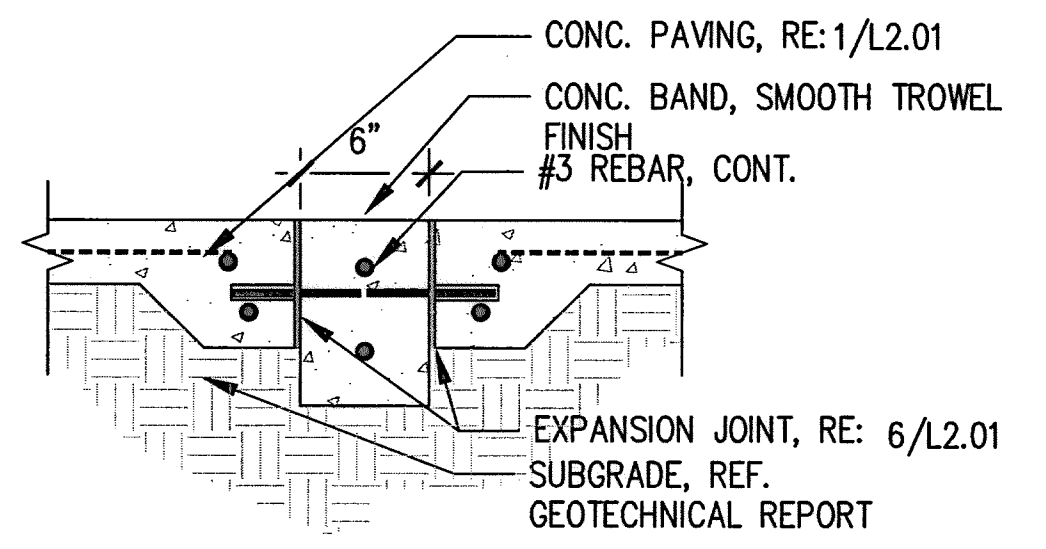
**9 AREA DRAIN IN PLANTER**  
 1" = 1'-0"



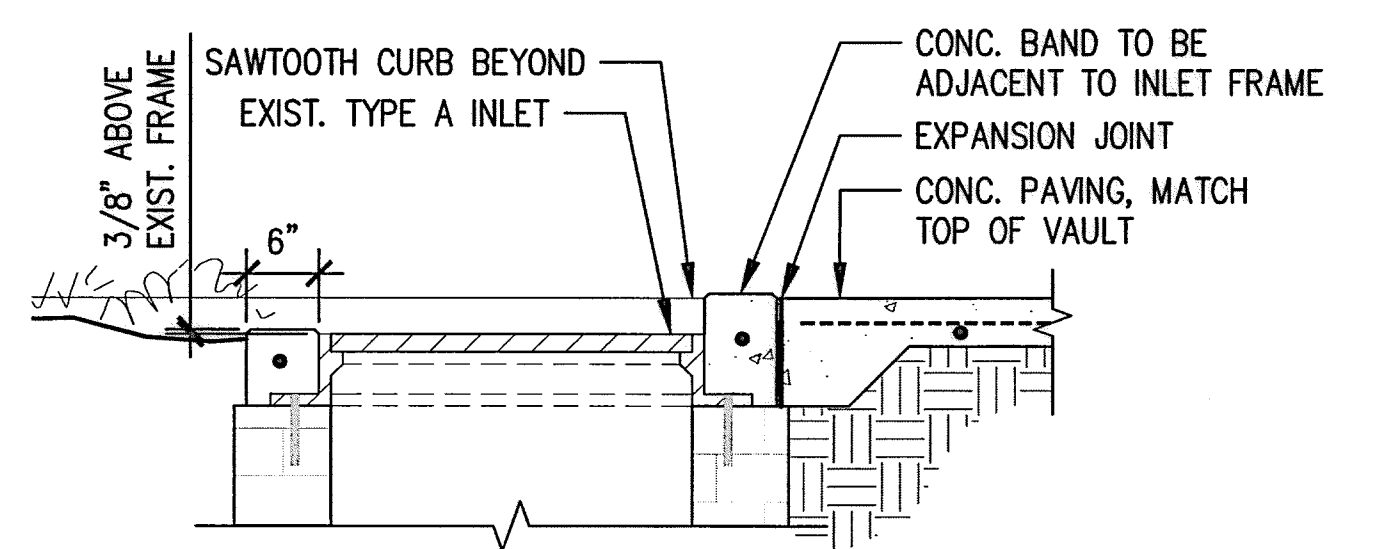
**7 PEDESTRIAN LIGHT POLE**  
 1/2" = 1'-0"



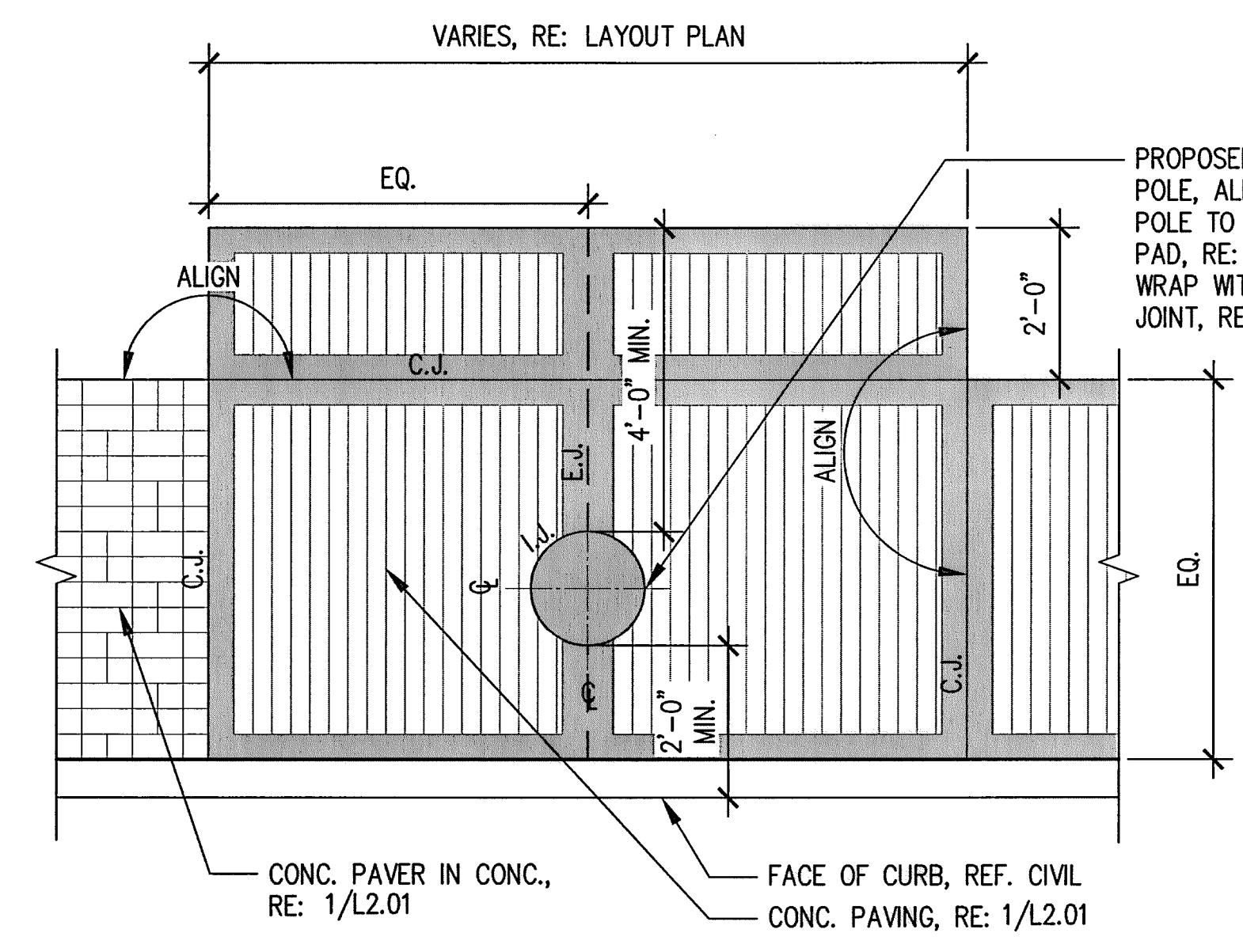
**6 CONC. CURB - SECTION**  
 1 1/2" = 1'-0"



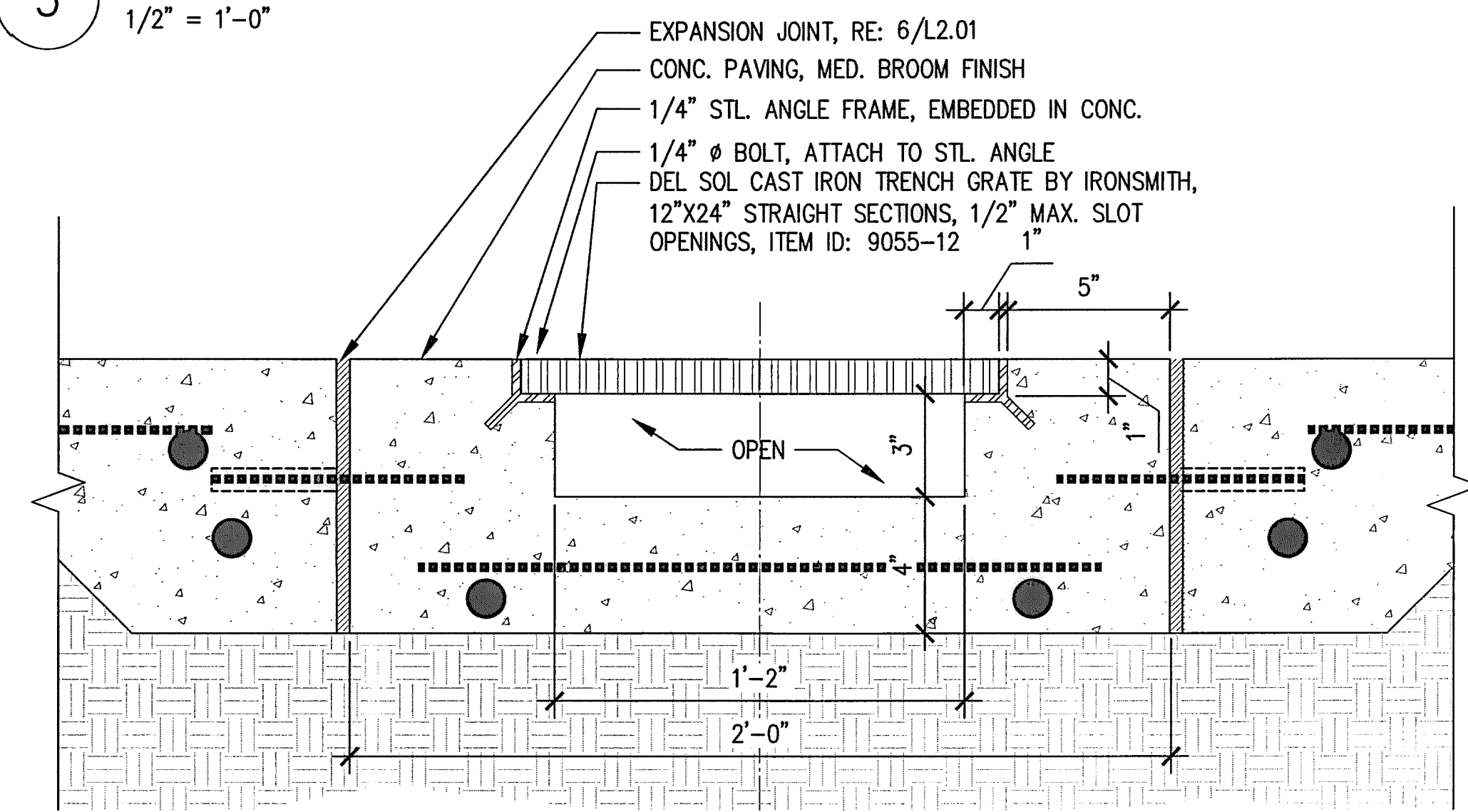
**8 FLUSH CONC. BAND - SECTION**  
 1" = 1'-0"



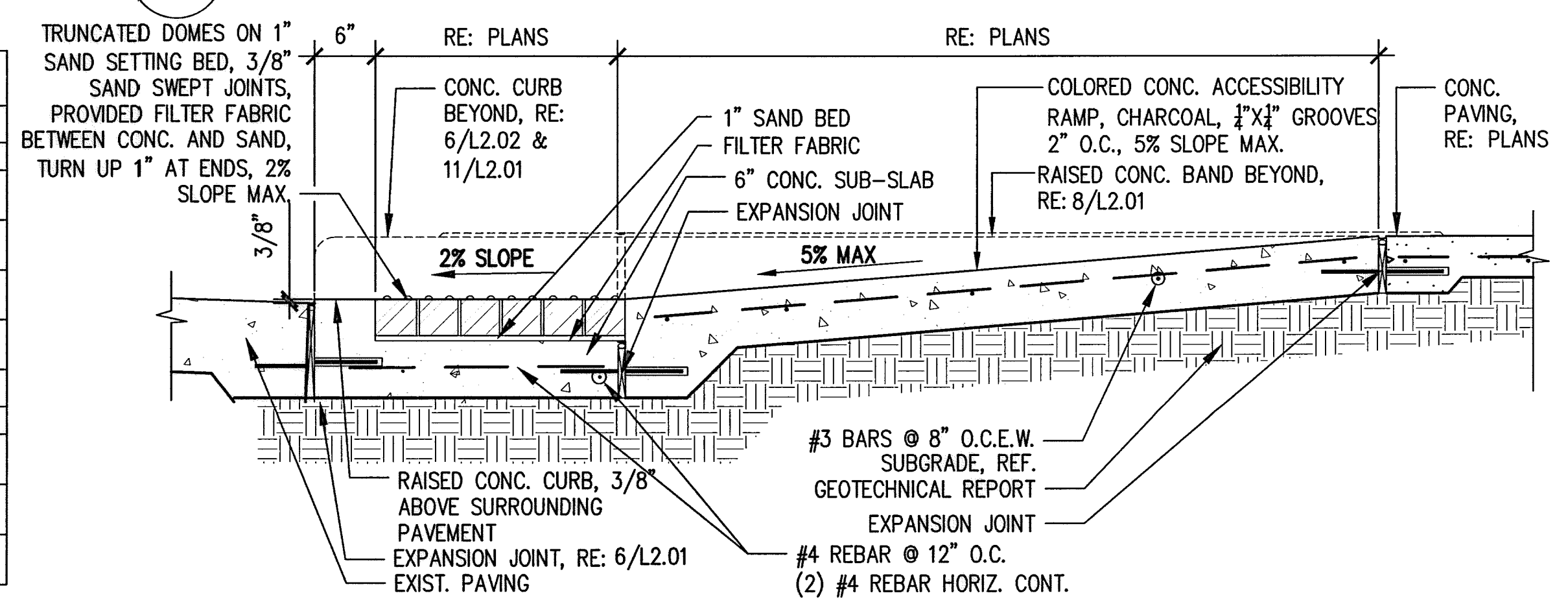
**5 CONC. BAND @ EXIST. INLET**  
 3/4" = 1'-0"



**3 LIGHTPOLE IN CONCRETE PAVING**  
 1/2" = 1'-0"



**2 STEEL GRATE AT CONC. CHANNEL**  
 3" = 1'-0"



**1 ACCESSIBLE RAMP - SECTION**  
 1" = 1'-0"

MATERIAL & FURNISHING SCHEDULE								
PAVING MATERIALS								
SYMBOL	DESCRIPTION	MATERIAL	SUPPLIER	SIZE	COLOR	FINISH	REMARK	DETAIL
P1	TYPICAL CONC. PAVING	CONC.	--	VARIES	NATURAL	MED. BROOM	4" SMOOTH TROWEL BOARDER	1/L2.01
P2	PAVERS IN CONC.	CONC. PAVER	PAVESTONE	4X4 & 4X8	AUSTIN GOLD BLEND	--	BASKET WEAVE PATTERN	2/L2.01
P3	COLORLED CONC.	CONC.	--	VARIES	CHARCOAL	GROOVED 2" O.C.	ADA COMPLIANT	
P4	DETECTABLE PAVER	CONC. PAVER	PAVESTONE	4X8	CHARCOAL	--	ADA COMPLIANT, STACKED	
SITE FURNISHINGS								
SYMBOL	DESCRIPTION	MATERIAL	SUPPLIER	SIZE	COLOR	FINISH	REMARK	DETAIL
F1	BACKLESS BENCH	STEEL	LANDSCAPE FORMS	22 1/4"X16"X92"	TBD	POWDER COATED	SURFACE MOUNTED NO ARMS	2/L2.05
F2	TRASH RECEPTACLE	STEEL	LANDSCAPE FORMS	27"X23"X47"	TBD	POWDER COATED	SURFACE MOUNTED	4/L2.05
F3	BICYCLE RACK	STEEL	LANDSCAPE FORMS	5'X43"X21 1/2"	TBD	POWDER COATED	SURFACE MOUNTED	1/L2.05

**4 MATERIAL AND FURNISHING SCHEDULE**

1 OCTOBER 2014

**SWA Group**  
 1245 W 18th Street  
 Houston, TX 77008  
 www.swagroup.com

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 HARDSCAPE DETAILS  
 L2.02

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=20'		
SHEET: 178	OF 226	

04:35 14\_10-01 C02ENTILE \\HOU1F5801\DATA\Project\RH1\RH1S401 Memorial W04 Lumkin CD\4 Drawings\Graphics\AutoCAD\Sheets\L2\L2.02 HARDSCAPE DETAILS.dwg

APP.	
REVISIONS	
DATE	
No.	

**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV.=82.18 FEET (NAVD 88\GEOID03)

**NOTES:**  
 REFER TO CIVIL FOR REPAIR OF DISTURBED  
 AREAS.

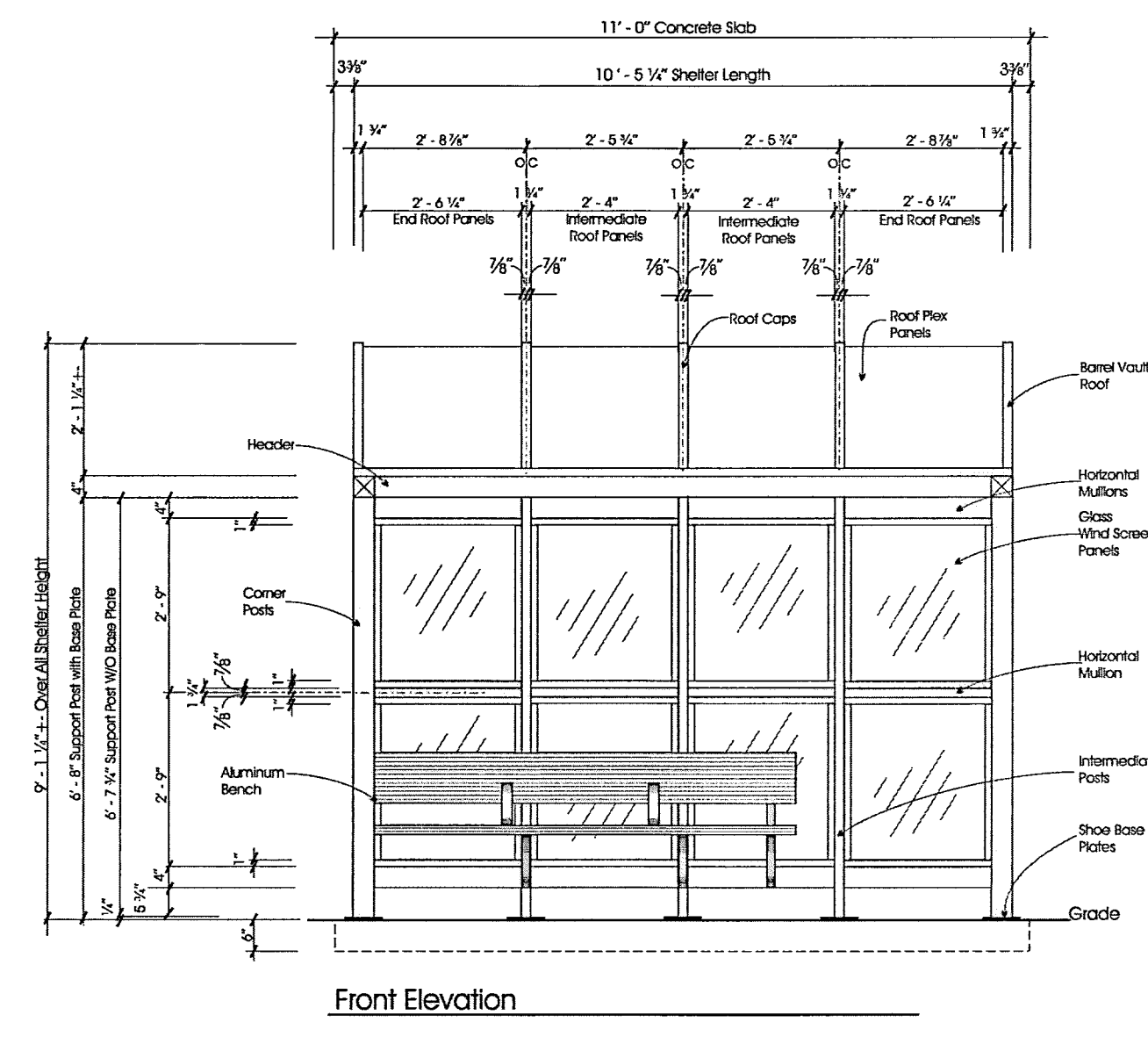
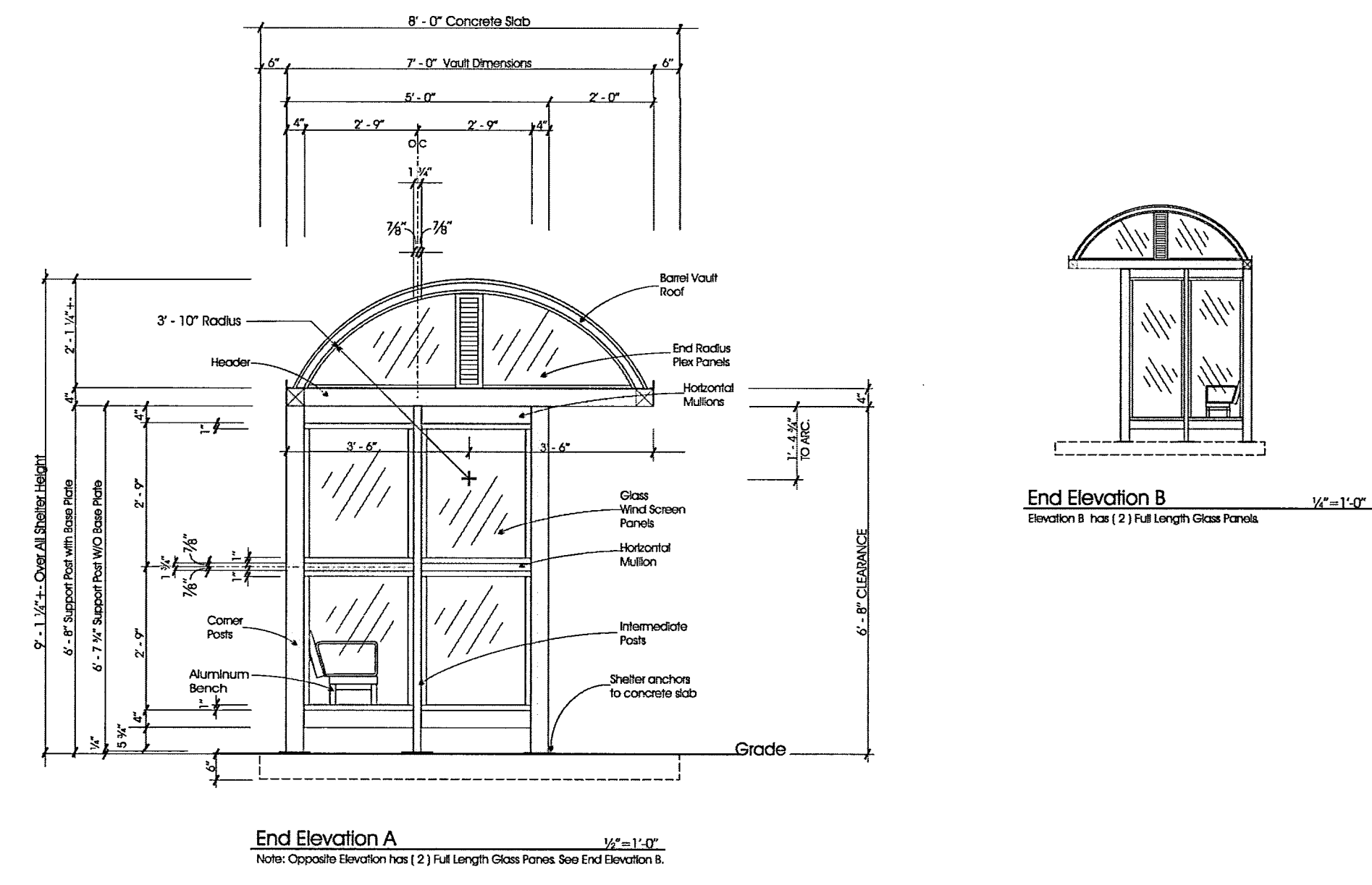
ONLY SIDEWALK CONC. TO RECEIVE 4"  
 SMOOTH TROWEL BOARDER. ALL OTHER CONC.  
 SHALL RECEIVE MED. BROOM FINISH  
 PERPENDICULAR TO DIRECTION OF TRAVEL

REF. 4/L2.02 FOR MATERIAL AND FURNISHING  
 SCHEDULE

REF. 4/L5.02 FOR PLANTING SCHEDULE

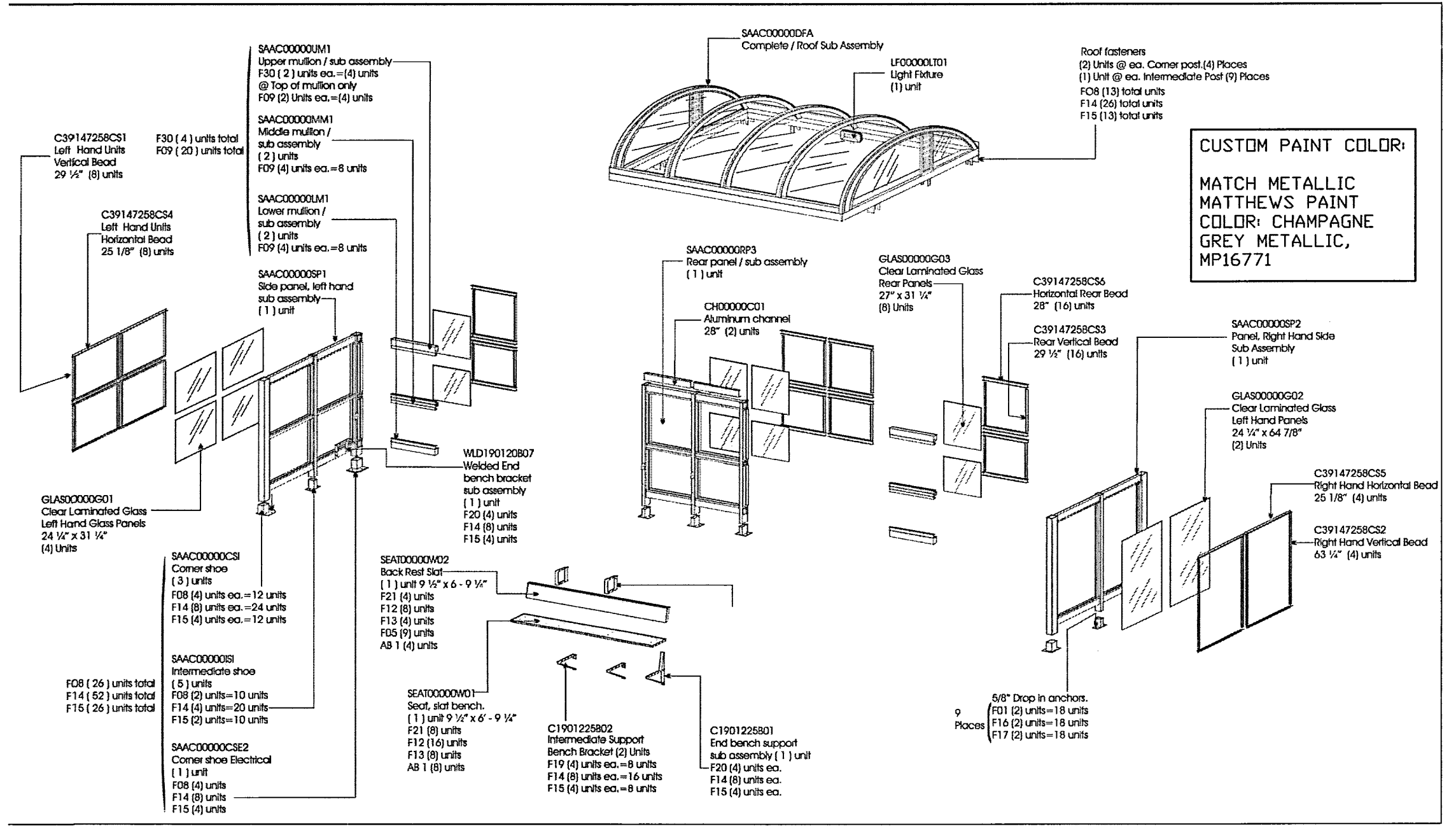
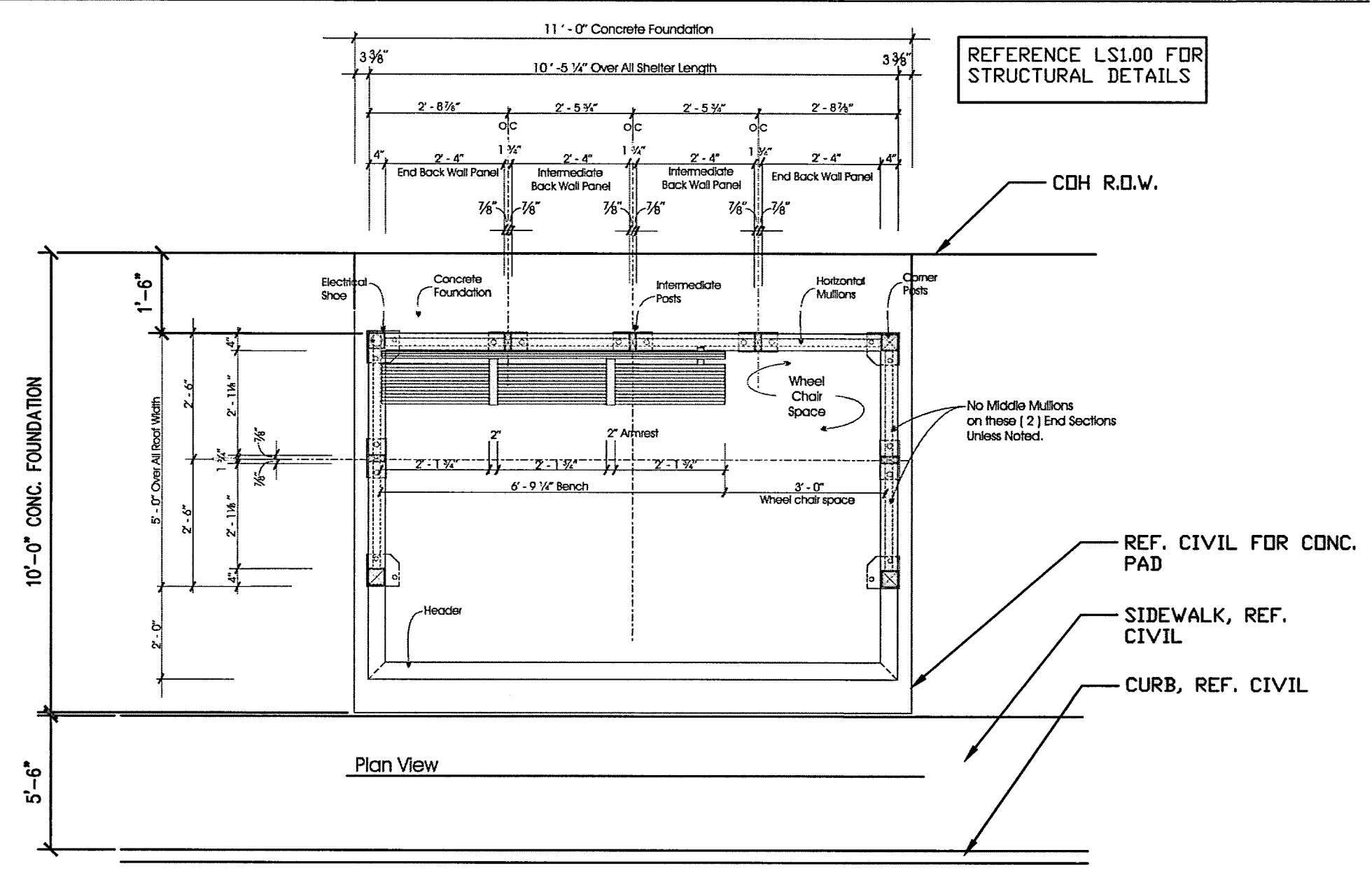
ALIGN PAVING JOINTS TO EDGE OF PAVEMENT,  
 RAISED CONC. BAND, EXIST. JOINTS, AND  
 PAVERS

EXIST. POWER POLES TO BE COORDINATED  
 WITH CENTERPOINT ENERGY AND CIVIL



**4 DOME SHELTER ELEVATION - SIDE**  
 NTS

**2 DOME SHELTER ELEVATION - FRONT**  
 NTS



**3 DOME SHELTER PLAN**  
 NTS

**1 DOME SHELTER ASSEMBLY DRAWING**  
 NTS

**SWA Group**  
 1245 W 18th Street  
 Houston, TX 77008  
 www.swagroup.com

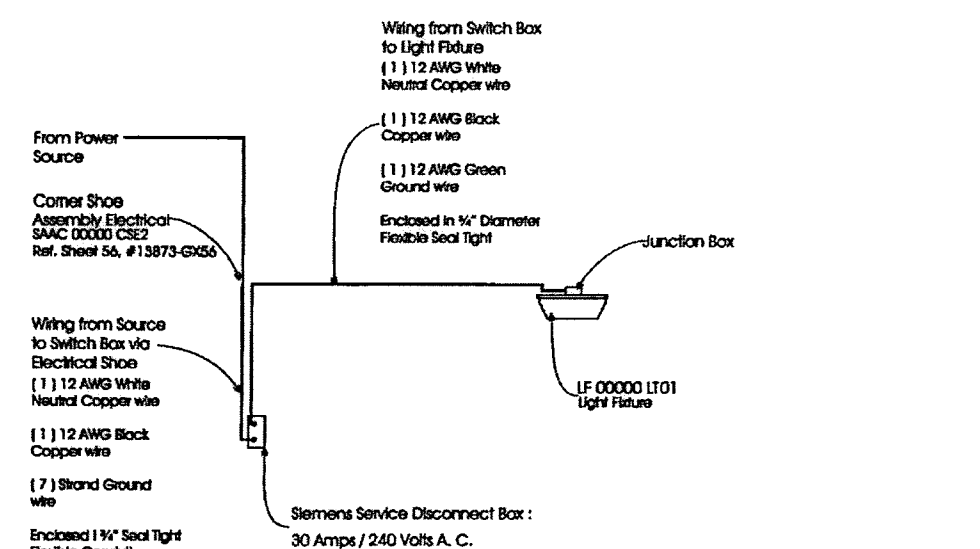
**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-117000-0012-3  
 SITE AMENITY DETAILS  
 L2.03

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

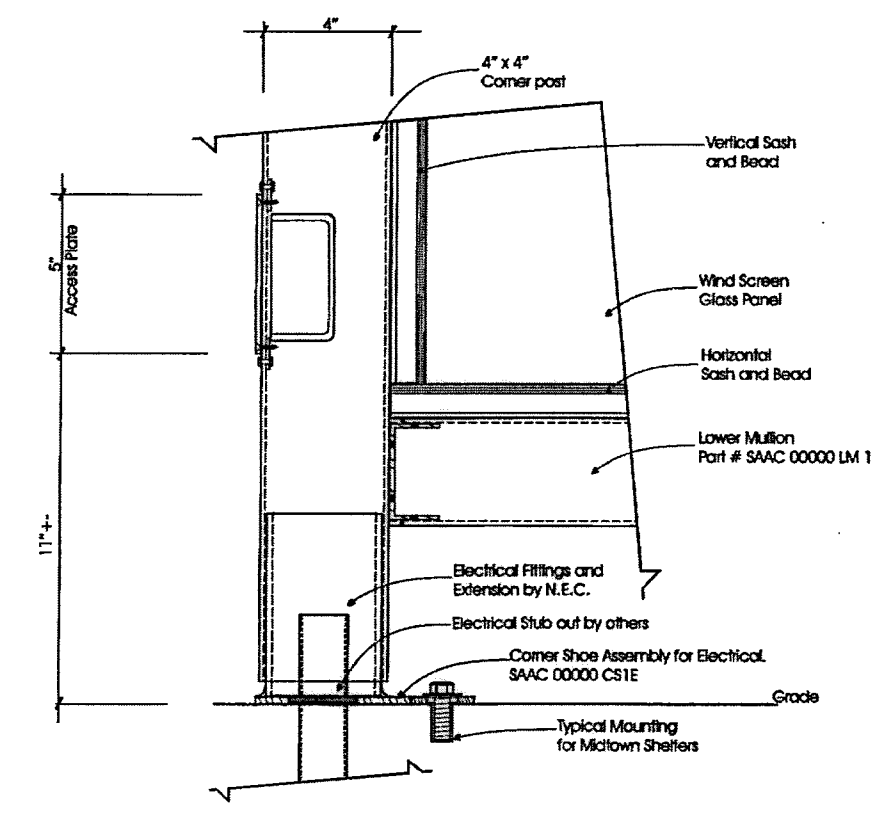
FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: HORZ: 1"=20'	
SHEET: 179 OF 226	

CGENTILE 04.35 14\_10-01 \\Houston\B01\data\Project\RHT\HTS401 Memorial W04 Lumpkin CD 4 Drawings\Graphics\AutoCAD\Sheets\L2\L2.03 SITE AMENITY DETAILS.dwg



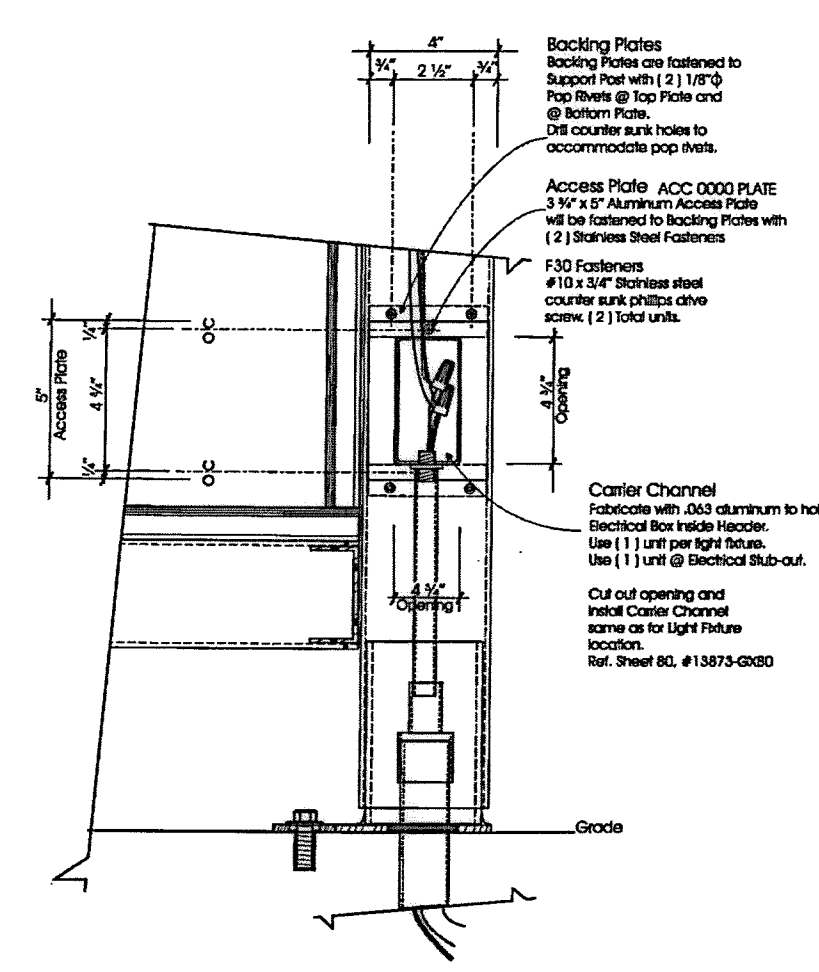
Electrical Schematic for 10' shelters  
Use this layout for 5' x 10' and 7' x 10' Shelters

7 ELECTRICAL SCHEMATIC LAYOUT  
NTS



End View Section  
Electrical Sub-out will be @ Rear Left of shelter unless noted.  
Electrical access will be behind Rear Left Post, unless noted.

6 ELECTRICAL BOX AT SHELTER  
NTS

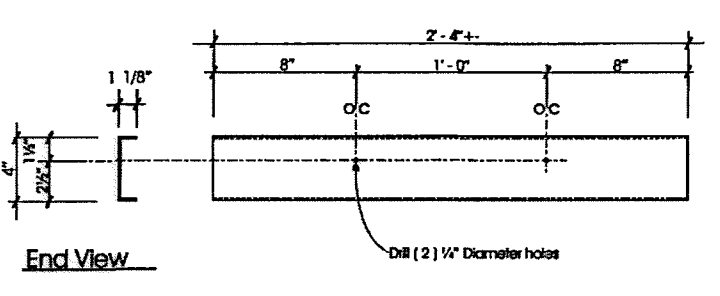


Front View of Access Plate for Electrical  
View of Rear Left Post

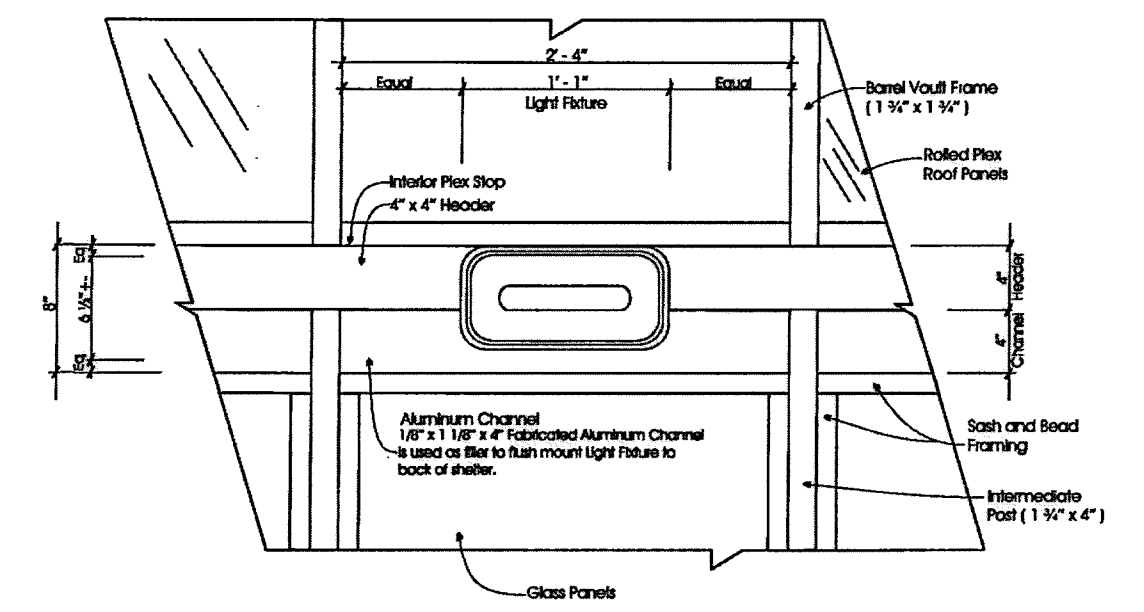
5 ELECTRICAL BOX AT SHELTER  
NTS

4 ELECTRICAL BOX CUT-OFF SWITCH  
NTS

Part Description	Part Number	Qty.	Dimensions	Shelter Type
Light Fixture (Cooper Lighting GOC-PP-28V-120VLL)	LF 00000 LTO1	1	6 1/2" x 11" x 1'-0"	5 x 10 and 7 x 10 5 x 20 and 7 x 20
28 Volt (PLC 15 MH) Type Lamp 120 V 0.97A 60 Wets	LAMP 0000 Lp1	1	6 1/2" x 11" x 1'-0"	5 x 10 and 7 x 10 5 x 20 and 7 x 20



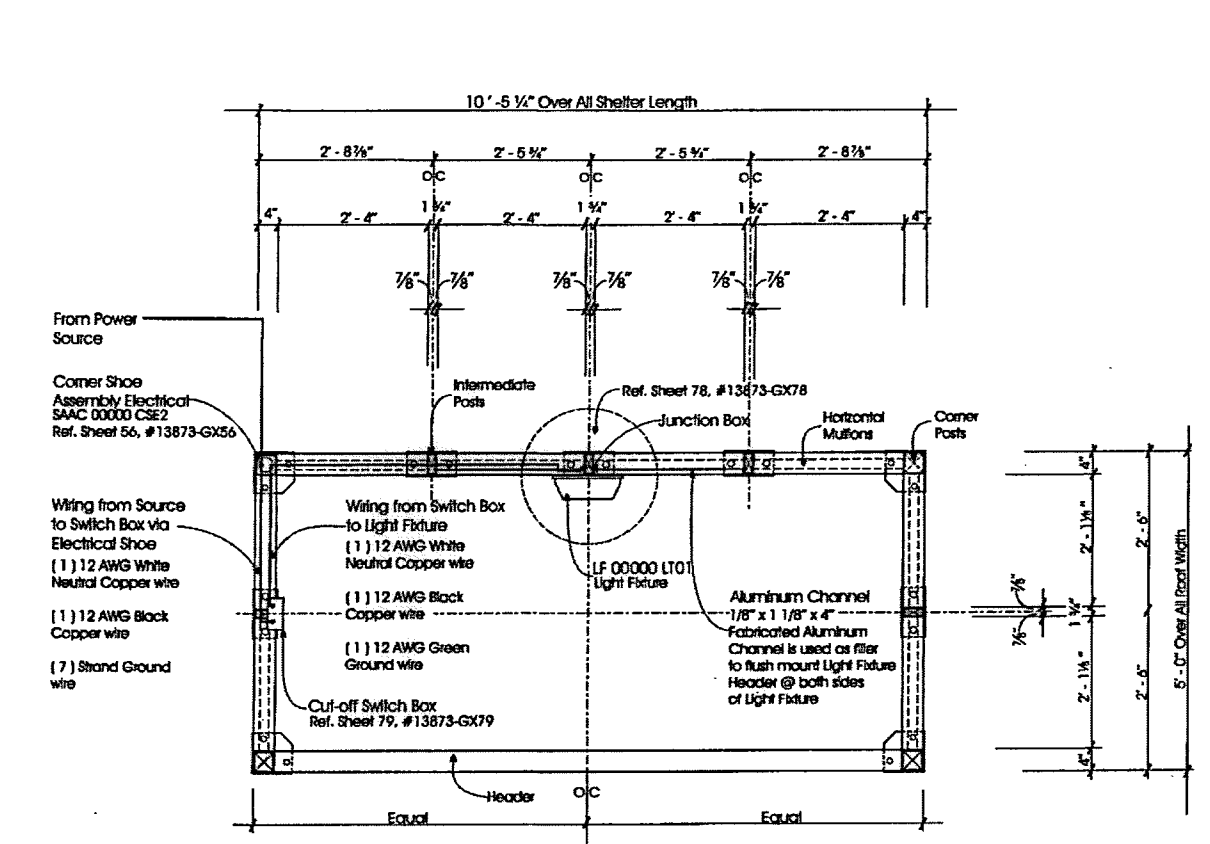
Front View: Aluminum Channel  
1/8" x 1/8" x 4" Fabricated Aluminum Channel is used as Bar to Mount Light Fixture to back of shelter. Use Anodized Champagne Finish.



Interior Elevation: Light Fixture  
1 1/2" x 1'-0"

3 INTERIOR ELEVATION  
NTS

2 SHELTER LIGHT FIXTURE  
NTS



Wiring Plan  
Use this layout for 5' x 10' and 7' x 10' Shelters.  
Sub-out is located @ Electrical Shoe/Cover Panel and runs to Electrical Switch Box through Roof Header. Switch Box is located on interior upper wall on centerline. Power then runs from Switch Box to Light Fixture @ 10' Shelters.  
There are (2) Light Fixtures on 10' Shelters.  
Wires from Sub-out to Switch Box and Light Fixtures are in Seal Tight Flexible Conduit. Junction Boxes are located @ the following connection points:  
First connection point is where Sub-out is connected to Shelter @ Base of Corner Post.  
Second connection goes to Switch Box then to Light Fixtures where the Junction Box is located. There is (1) Junction Box per Light Fixture.

1 ELECTRICAL PLAN  
NTS

**FAIL-SAFE\***

**DESCRIPTION:**  
The Fail-Safe VR 2000 Decorative Series combines strength-gaining architecture with energy-saving technology. Architecturally styled frames with radiused corners actually increase the ability of the area to deflect stress and absorb impact. Extra thick injection molded polycarbonate lens incorporates an optical design that obscures the lamp image and spreads light evenly. U.L. listed and C.S.A. certified for wet locations.

**The durable, weather decorative GOC-PP-28V-120VLL is perfect for use in corridors, dormitories, public rest rooms, rapid transit stations, loading docks and minimum security institutions.**

**SPECIFICATION FEATURES:**

- A - Lens:** One piece injection molded UV stabilized polycarbonate, min. 0.130" thick. All light control patterns and beaded area on the inside surface of the lens, reducing dirt buildup and making cleaning easier.
- B - Fasteners:** Two stainless steel TORX® screws with center-riped pins. Screw heads are recessed into lens to minimize tamper-resistance. Fasteners are captive in the lens and sealed by means of a neoprene O-ring.
- C - Mounting:** 18 ga. CR6 mounting plate with white high reflective polyester powder coat finish.
- D - GOC Housing (Optional Accessory):** Four 1/4" dia. fasteners are required for maximum vandal resistance. Cast aluminum with four 1/2" NPT conduit entries.
- E - Lamp (Qty. 02/04):** 28 Volt, 60 Watt.
- F - Socket:** Polycarbonate. Dedicated to correct lamp wattage. Incorporated in polycarbonate medium base with recessed brass screw shell.
- G - Gasket:** One piece die-cut closed cell EPDM mounting gasket seals entire lens and housing.
- H - Ballast:** Copper-wound NFB, HFF or electronic ballast are available with some wattage. Consult existing information.

**DC DW DECORATIVE**  
7W - 28V Fluorescent  
60W Incandescent  
POLYCARBONATE  
DECORATIVE LUMINAIRE  
Clear Polycarbonate or White Vandal Resistant Luminaires

**ENERGY DATA**  
For Energy Management consult local utility and request the performance of this fixture series, refer to the operating instructions for input wattage.

**ITEM DIMENSIONS**  
Flat  
Shallow Ceiling

**Specifications and Dimensions subject to change without notice.**

**COOPER LIGHTING**  
www.cooperlighting.com

**BENCHMARK:**  
CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEOID03)

**NOTES:**  
REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.

ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL

REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE

REF. 4/L5.02 FOR PLANTING SCHEDULE

ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS

EXIST. POWER POLES TO BE COORDINATED WITH CENTERPOINT ENERGY AND CIVIL

**SWA Group**  
1245 W 18th Street  
Houston, TX 77008  
www.swagroup.com

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

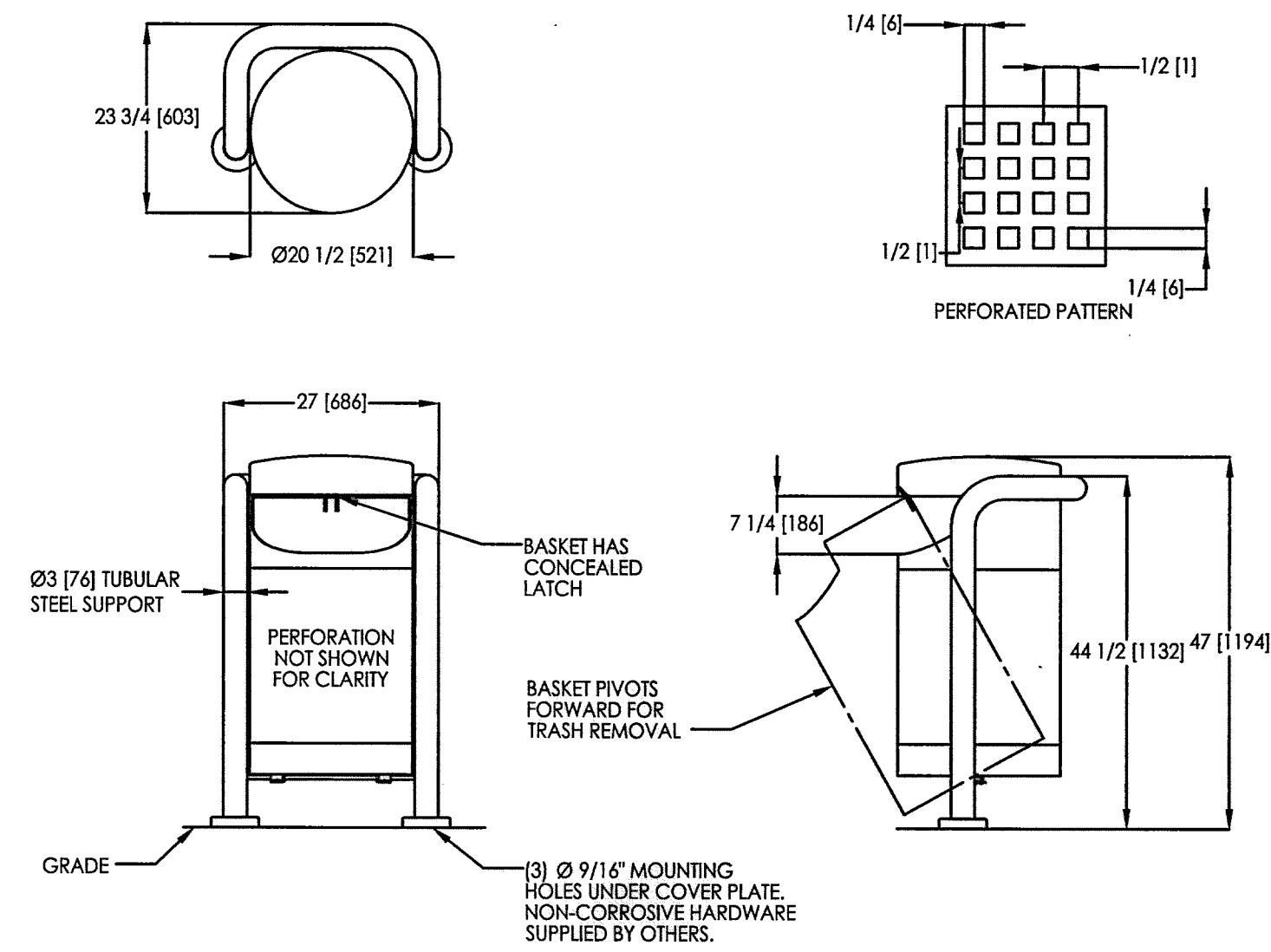
LUMPKIN ROAD  
N-17000-0012-3  
SITE AMENITY DETAILS  
L2.04

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SMQ

FILE NO.:  
DRAWING SCALE:  
VERT: 1"=20'  
HORZ: 1"=20'  
SHEET: 180 OF 226

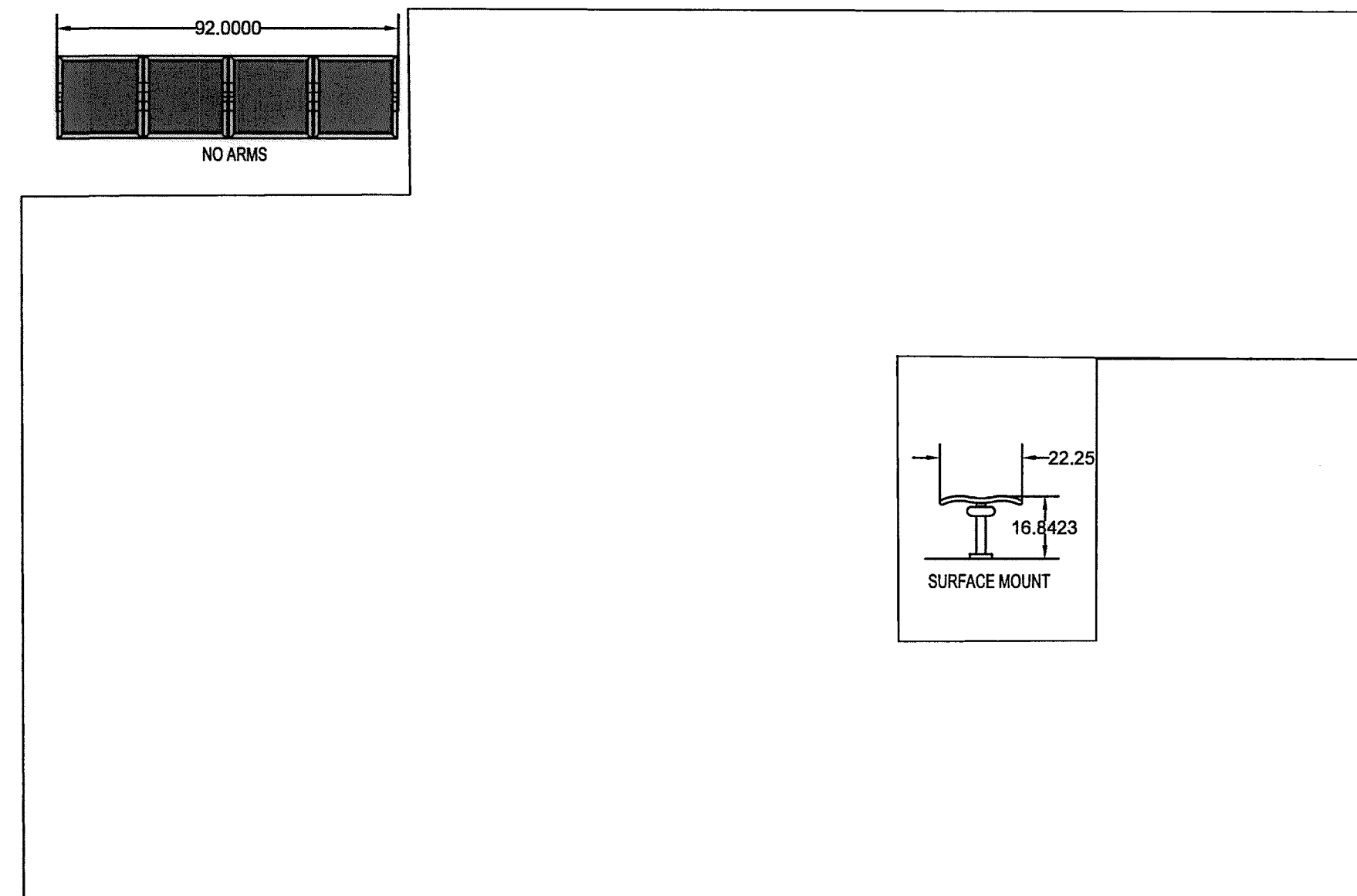
CITY DWG NO.



Drawing: PK167-03  
 Date: 6/21/2012  
 Dimensions are in Inches[mm]  
 U.S. Patent No.: D319,520

CONFIDENTIAL DRAWING INFORMATION CONTAINED HEREIN IS THE PROPERTY OF LANDSCAPE FORMS, INC. INTENDED USE IS LIMITED TO DESIGN PROFESSIONALS SPECIFYING LANDSCAPE FORMS, INC. PRODUCTS AND THEIR DIRECT CLIENTS. DRAWING IS NOT TO BE COPIED OR DISCLOSED TO OTHERS WITHOUT THE CONSENT OF LANDSCAPE FORMS, INC. © 2012 LANDSCAPE FORMS, INC. ALL RIGHTS RESERVED.

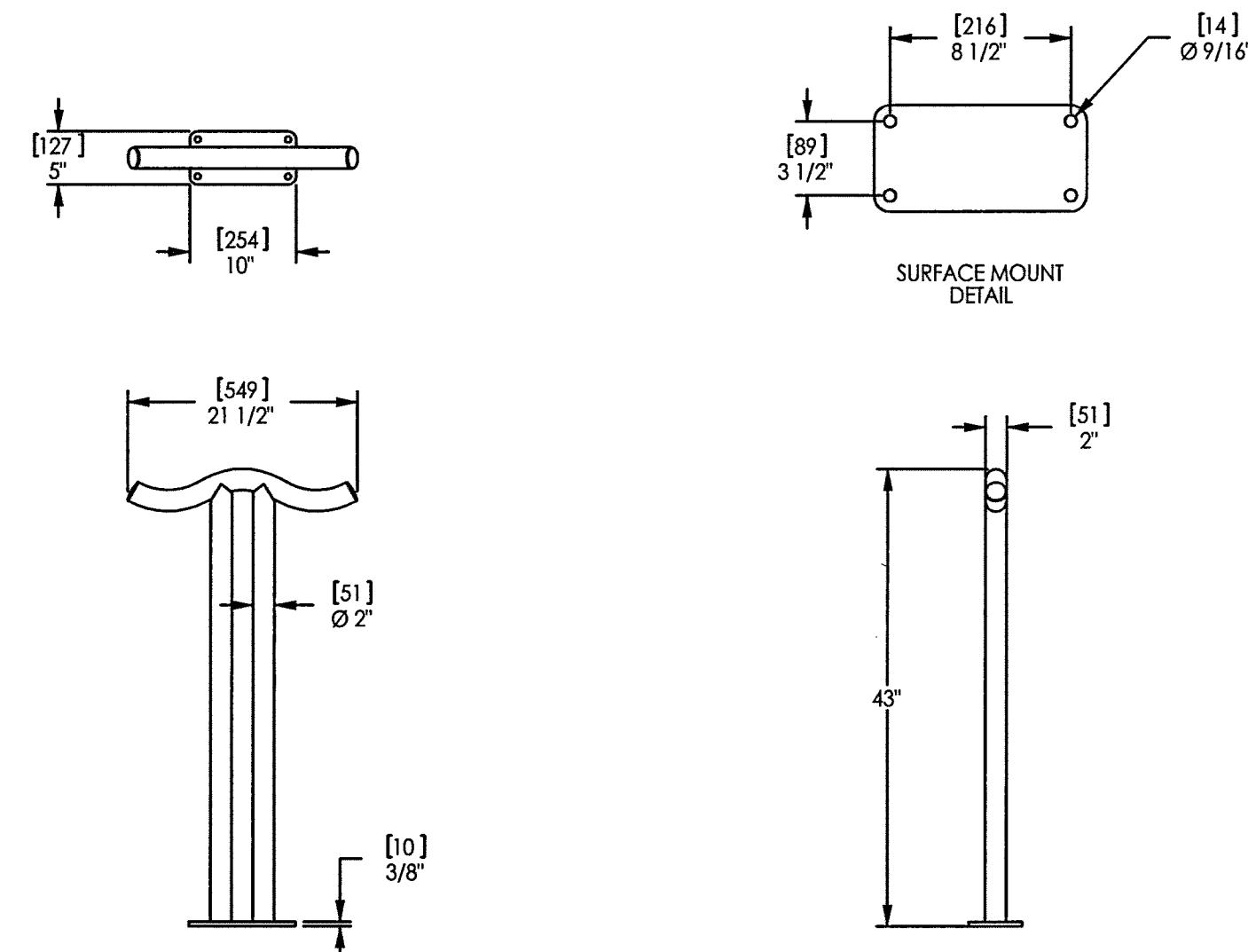
4 TRASH RECEPACLE  
 NTS



Drawing: PD0036  
 Date: 06/11/2012  
 Dimensions are in Inches[mm]  
 U.S. Patent Nos. D383,629

CONFIDENTIAL DRAWING INFORMATION CONTAINED HEREIN IS THE PROPERTY OF LANDSCAPE FORMS, INC. INTENDED USE IS LIMITED TO DESIGN PROFESSIONALS SPECIFYING LANDSCAPE FORMS, INC. PRODUCTS AND THEIR DIRECT CLIENTS. DRAWING IS NOT TO BE COPIED OR DISCLOSED TO OTHERS WITHOUT THE CONSENT OF LANDSCAPE FORMS, INC. © 2012 LANDSCAPE FORMS, INC. ALL RIGHTS RESERVED.

2 BACKLESS BENCH  
 NTS



Drawing: P1195-01  
 Date: 12/2/2010  
 Dimensions are in Inches[mm]  
 U.S. Patent No. D374,849

CONFIDENTIAL DRAWING INFORMATION CONTAINED HEREIN IS THE PROPERTY OF LANDSCAPE FORMS, INC. INTENDED USE IS LIMITED TO DESIGN PROFESSIONALS SPECIFYING LANDSCAPE FORMS, INC. PRODUCTS AND THEIR DIRECT CLIENTS. DRAWING IS NOT TO BE COPIED OR DISCLOSED TO OTHERS WITHOUT THE CONSENT OF LANDSCAPE FORMS, INC. © 2010 LANDSCAPE FORMS, INC. ALL RIGHTS RESERVED.

1 BICYCLE RACK  
 NTS

BENCHMARK:  
 CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEOID03)

NOTES:  
 REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.

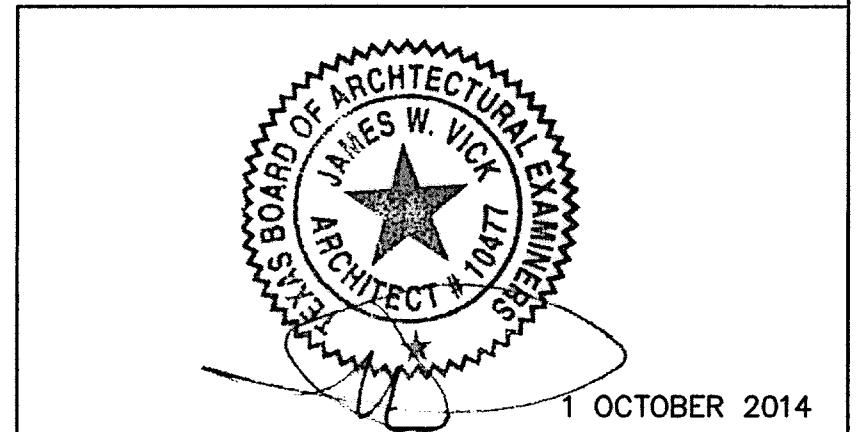
ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL

REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE

REF. 4/L5.02 FOR PLANTING SCHEDULE

ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS

EXIST. POWER POLES TO BE COORDINATED WITH CENTERPOINT ENERGY AND CIVIL



SWA Group  
 1245 W 18th Street  
 Houston, TX 77008  
 www.swagroup.com

LAN Lockwood, Andrews & Newnam, Inc.  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3

SITE FURNISHING DETAILS

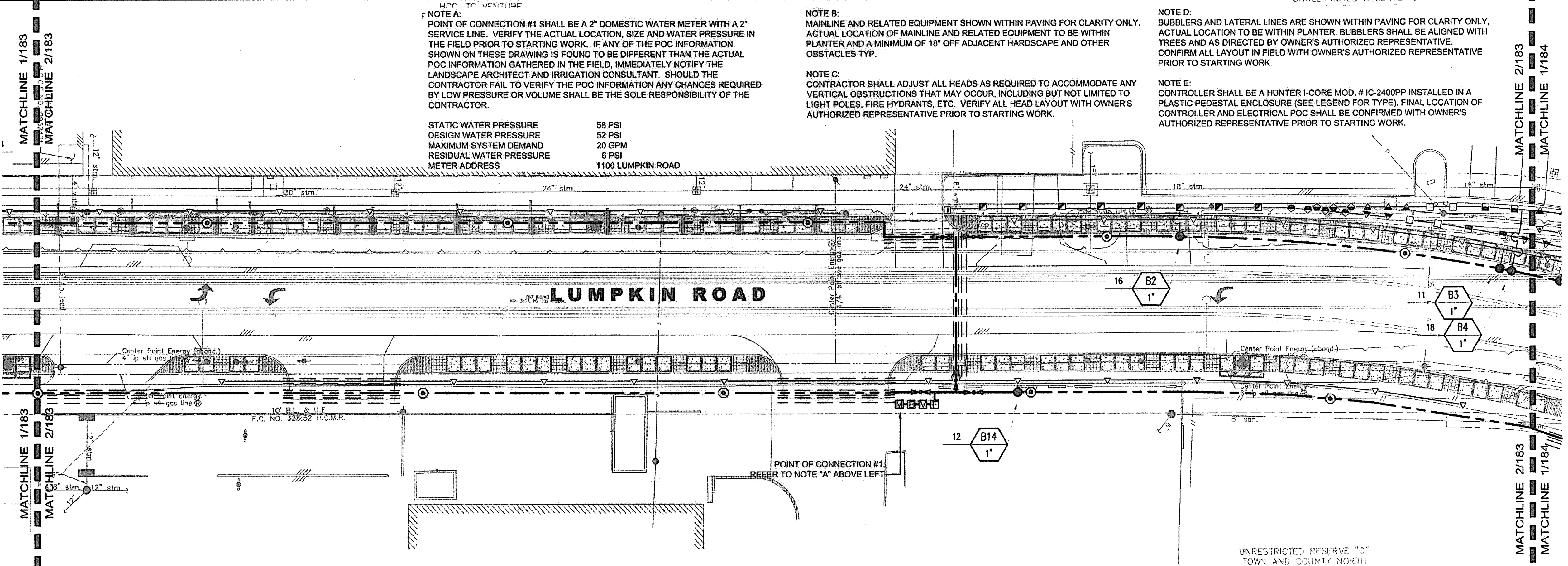
L2.05

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

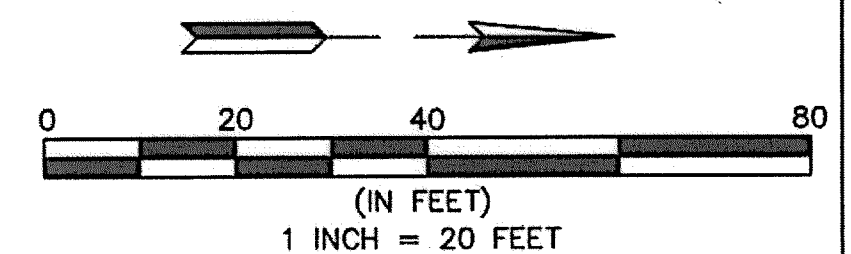
FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: HORZ: 1"=20'	
SHEET: 181 OF 226	



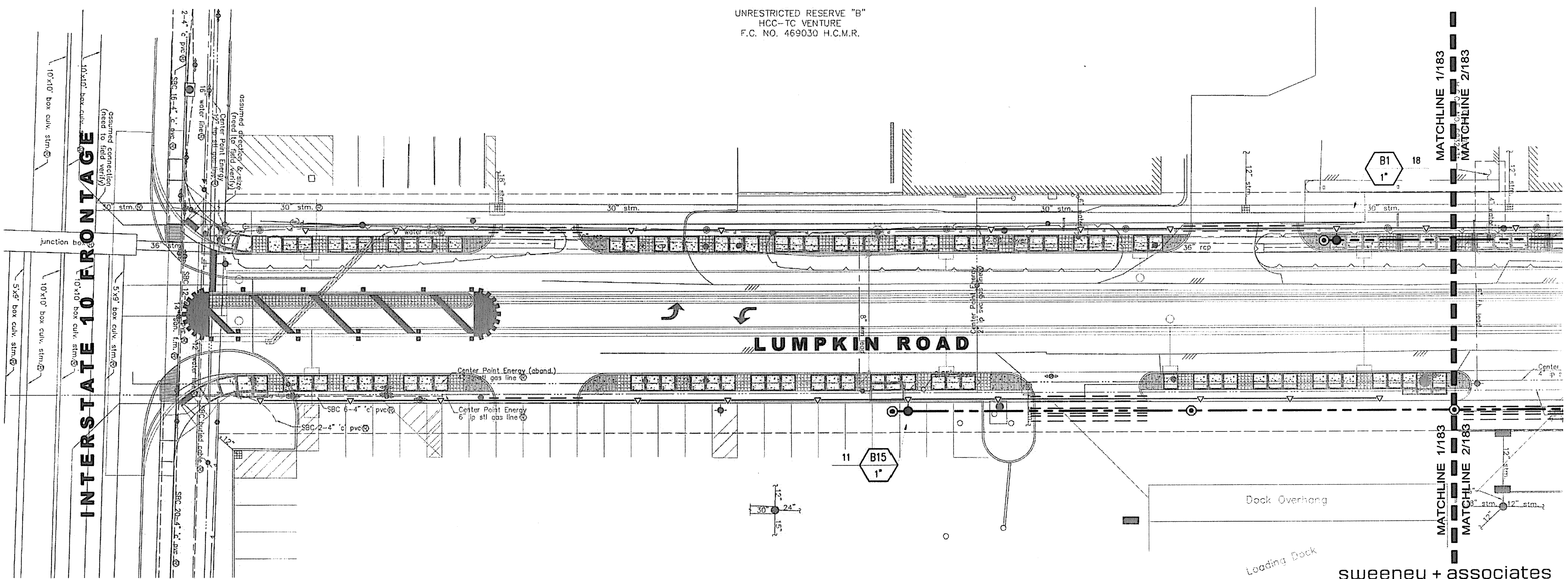


**BENCHMARK:**  
CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEOID03)

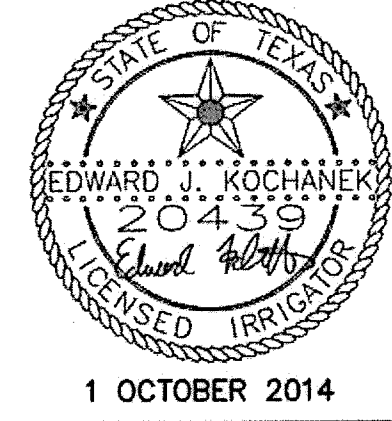
**NOTES:**  
REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.  
ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL  
REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE  
REF. 4/L5.02 FOR PLANTING SCHEDULE  
ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS



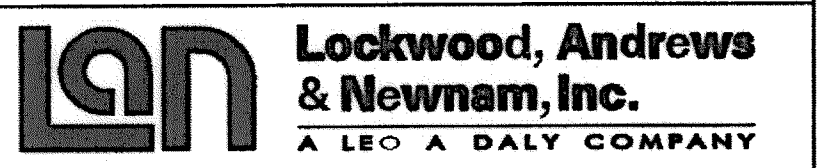
2 IRRIGATION PLAN  
1" = 20'



1 IRRIGATION PLAN  
1" = 20'



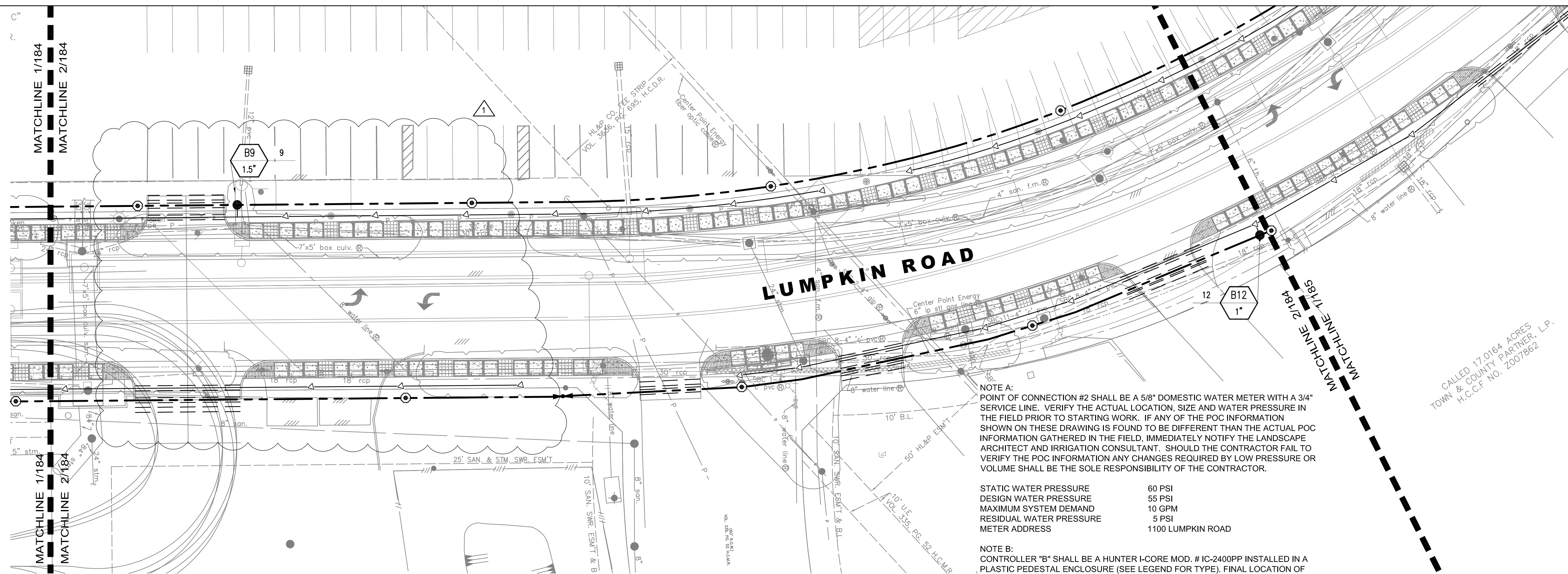
SWA Group  
1245 W 18th Street  
Houston, TX 77008  
www.swagroup.com



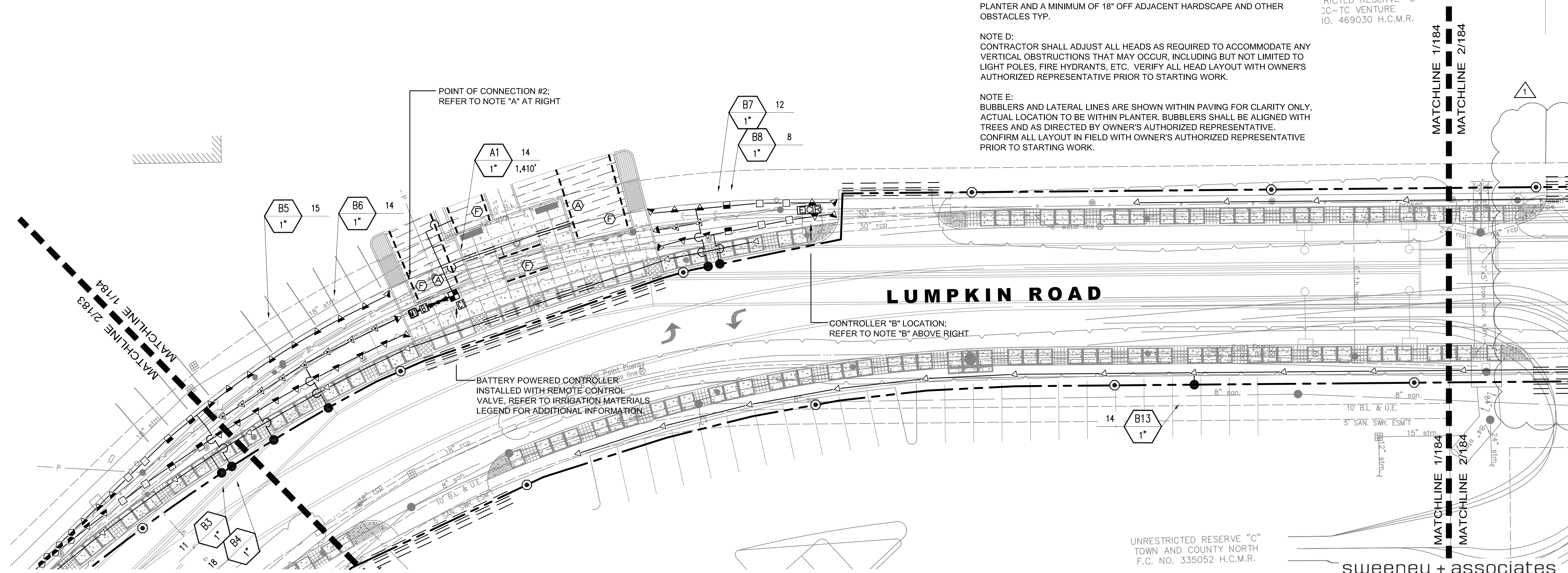
LUMPKIN ROAD  
N-T17000-0012-3  
IRRIGATION PLAN  
0+00 TO 12+00

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SW
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: HORZ: 1"=20'		
SHEET: 183	OF 226	

sweeney + associates  
IRRIGATION DESIGN AND CONSULTING  
3000 Joe D'Magno Blvd., #106, 1700, Suite 61  
Round Rock, TX 78665  
info@sweeneyassoc.com F: (512) 306-9330  
www.sweeneyassoc.com F: (512) 306-9335



2 IRRIGATION PLAN  
1" = 20'



1 IRRIGATION PLAN  
1" = 20'

NOTE A:  
POINT OF CONNECTION #2 SHALL BE A 5/8" DOMESTIC WATER METER WITH A 3/4" SERVICE LINE. VERIFY THE ACTUAL LOCATION, SIZE AND WATER PRESSURE IN THE FIELD PRIOR TO STARTING WORK. IF ANY OF THE POC INFORMATION SHOWN ON THESE DRAWING IS FOUND TO BE DIFFERENT THAN THE ACTUAL POC INFORMATION GATHERED IN THE FIELD, IMMEDIATELY NOTIFY THE LANDSCAPE ARCHITECT AND IRRIGATION CONSULTANT. SHOULD THE CONTRACTOR FAIL TO VERIFY THE POC INFORMATION ANY CHANGES REQUIRED BY LOW PRESSURE OR VOLUME SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

STATIC WATER PRESSURE 60 PSI  
DESIGN WATER PRESSURE 55 PSI  
MAXIMUM SYSTEM DEMAND 10 GPM  
RESIDUAL WATER PRESSURE 5 PSI  
METER ADDRESS 1100 LUMPKIN ROAD

NOTE B:  
CONTROLLER "B" SHALL BE A HUNTER I-CORE MOD. # IC-2400PP INSTALLED IN A PLASTIC PEDESTAL ENCLOSURE (SEE LEGEND FOR TYPE). FINAL LOCATION OF CONTROLLER AND ELECTRICAL POC SHALL BE CONFIRMED WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO STARTING WORK.

NOTE C:  
MAINLINE AND RELATED EQUIPMENT SHOWN WITHIN PAVING FOR CLARITY ONLY. ACTUAL LOCATION OF MAINLINE AND RELATED EQUIPMENT TO BE WITHIN PLANTER AND A MINIMUM OF 18" OFF ADJACENT HARDSCAPE AND OTHER OBSTACLES TYP.

NOTE D:  
CONTRACTOR SHALL ADJUST ALL HEADS AS REQUIRED TO ACCOMMODATE ANY VERTICAL OBSTRUCTIONS THAT MAY OCCUR, INCLUDING BUT NOT LIMITED TO LIGHT POLES, FIRE HYDRANTS, ETC. VERIFY ALL HEAD LAYOUT WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO STARTING WORK.

NOTE E:  
BUBBLERS AND LATERAL LINES ARE SHOWN WITHIN PAVING FOR CLARITY ONLY. ACTUAL LOCATION TO BE WITHIN PLANTER. BUBBLERS SHALL BE ALIGNED WITH TREES AND AS DIRECTED BY OWNER'S AUTHORIZED REPRESENTATIVE. CONFIRM ALL LAYOUT IN FIELD WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO STARTING WORK.

UNRESTRICTED RESERVE "C"  
TOWN AND COUNTY NORTH  
F.C. NO. 335052 H.C.M.R.

BENCHMARK:  
CITY OF HOUSTON SURVEY MARKER STAMPED  
4958/7710 LOCATED AT EAST SIDE OF  
LUMPKIN RD., 110 FEET SOUTHWEST OF  
LARSTON DR. INTERSECTION IN KEYMAP 449Z  
ELEV.=82.18 FEET (NAVD 88\GEOID03)

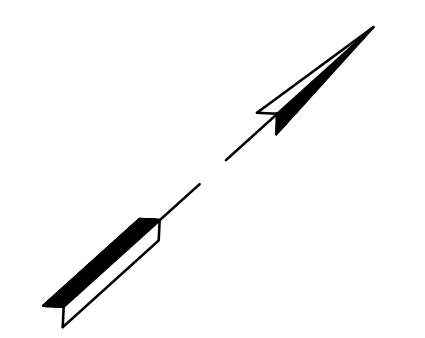
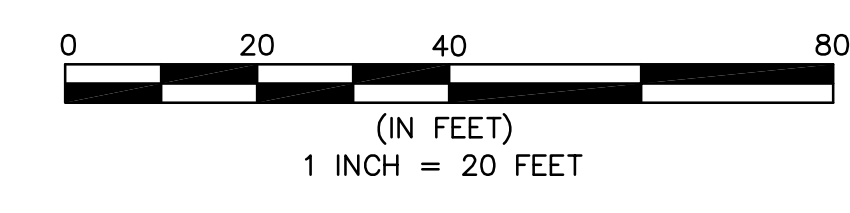
NOTES:  
REFER TO CIVIL FOR REPAIR OF DISTURBED  
AREAS.

ONLY SIDEWALK CONC. TO RECEIVE 4"  
SMOOTH TROWEL BOARDER, ALL OTHER CONC.  
SHALL RECEIVE MED. BROOM FINISH  
PERPENDICULAR TO DIRECTION OF TRAVEL

REF. 4/L2.02 FOR MATERIAL AND FURNISHING  
SCHEDULE

REF. 4/L5.02 FOR PLANTING SCHEDULE

ALIGN PAVING JOINTS TO EDGE OF PAVEMENT,  
RAISED CONC. BAND, EXIST. JOINTS, AND  
PAVERS



CALLLED 17.0164 ACRES  
TOWN & COUNTY PARTNER, L.P.  
H.C.C.F. NO. 2007862



22 January 2015

SWA Group  
1245 W 18th Street  
Houston, TX 77008  
www.swagroup.com

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
IRRIGATION PLAN  
12+00 TO 19+00

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO.: FACILITY  
DRAWING SCALE: CITY DWG NO.

VERT: 1"=20'  
SHEET: 184 OF 226

sweeney + associates  
IRRIGATION DESIGN AND CONSULTING  
3000 Joe DiMaggio Blvd., Bldg. 1700, Suite 61  
Round Rock, TX 78665  
e: info@sweeneyassoc.com t: (512) 306-9350  
w: www.sweeneyassoc.com f: (512) 306-9035

MSALMI  
11:45  
15\_01-23  
Z:\SWA-Houston\Lumpkin Road\3.02 IRRIGATION PLAN.dwg



**PROPOSED IRRIGATION NOTES**

NOTE A:  
MAINLINE AND RELATED EQUIPMENT SHOWN WITHIN PAVING FOR CLARITY ONLY. ACTUAL LOCATION OF MAINLINE AND RELATED EQUIPMENT TO BE WITHIN PLANTER AND A MINIMUM OF 18" OFF ADJACENT HARDSCAPE AND OTHER OBSTACLES TYP.

NOTE B:  
CONTRACTOR SHALL ADJUST ALL HEADS AS REQUIRED TO ACCOMMODATE ANY VERTICAL OBSTRUCTIONS THAT MAY OCCUR, INCLUDING BUT NOT LIMITED TO LIGHT POLES, FIRE HYDRANTS, ETC. VERIFY ALL HEAD LAYOUT WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO STARTING WORK.

NOTE C:  
BUBBLERS AND LATERAL LINES ARE SHOWN WITHIN PAVING FOR CLARITY ONLY. ACTUAL LOCATION TO BE WITHIN PLANTER. BUBBLERS SHALL BE ALIGNED WITH TREES AND AS DIRECTED BY OWNER'S AUTHORIZED REPRESENTATIVE. CONFIRM ALL LAYOUT IN FIELD WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO STARTING WORK.

**EXISTING IRRIGATION NOTES**

NOTE 1:  
CONTRACTOR SHALL MAINTAIN EXISTING MAINLINES IN WORKING ORDER. COORDINATE ALL INTERRUPTIONS OF OPERATION OF THE EXISTING IRRIGATION TO A MINIMUM. COORDINATE ALL INTERRUPTIONS WITH THE OWNER'S REPRESENTATIVE.

NOTE 2:  
CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING IRRIGATION EQUIPMENT DAMAGED DURING CONSTRUCTION AND IF DAMAGED, SHALL REPLACE WITH SAME MANUFACTURER AND MODEL.

NOTE 3:  
ANY EXISTING IRRIGATION CONTROL VALVES CONNECTED TO EXISTING CONTROLLER SHALL BE RECONNECTED TO EXISTING CONTROLLER. CONFIRM PROPER CONTROLLER OPERATION AND INSTALLATION WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO COMMENCING WORK AND UPON COMPLETION OF WORK.

NOTE 4:  
CONTRACTOR SHALL CONFIRM THE EXISTING CONTROLLER MAKE AND MODEL AND SHALL CONFIRM THAT SAID CONTROLLER HAS ADEQUATE OPEN STATIONS TO OPERATE ANY ADJUSTED AND ALL PROPOSED IRRIGATION SYSTEM MODIFICATIONS. NOTIFY OWNER'S AUTHORIZED REPRESENTATIVE SHOULD ANY DISCREPANCIES BE NOTED.

NOTE 5:  
CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR/MODIFICATION/REROUTING OF ALL ADJACENT IRRIGATION SYSTEM EQUIPMENT THAT IS AFFECTED BY NEW CONSTRUCTION IMPROVEMENTS. CONTRACTOR SHALL REPAIR SAID SYSTEMS TO A LIKE NEW MANNER, PROVIDING NO LESS THAN 100% OF HEAD RADIUS COVERAGE IN ALL AREAS WITH SYSTEM LAYOUT AS APPROVED BY OWNER'S AUTHORIZED REPRESENTATIVE. CONTRACTOR SHALL CONFIRM ALL AREAS REQUIRING MODIFICATION WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO BIDDING WORK AND PRIOR TO COMMENCING WORK.

NOTE 6:  
CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE REMOVAL AND DISPOSAL OF ALL EXISTING IRRIGATION EQUIPMENT AFFECTED BY THE NEW CONSTRUCTION IMPROVEMENTS, IF NECESSARY. CONTRACTOR SHALL VERIFY ALL EQUIPMENT TO BE REMOVED AND DISPOSED OF IN FIELD PRIOR TO BIDDING WORK AND PRIOR TO COMMENCING WORK.

NOTE 7:  
CONTRACTOR SHALL FIELD VERIFY DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO BIDDING WORK AND AGAIN PRIOR TO COMMENCING WORK. VERIFICATION SHALL BE DOCUMENTED AND DELIVERED TO OWNER'S REPRESENTATIVE.

NOTE 8:  
CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ALL SCH. 40 PVC SLEEVING UNDER PAVING, WALLS AND CURBS AT NO LESS THAN 24" BELOW GRADE AND NO LESS THAN 2X DIAMETER OF IRRIGATION PIPE IN AREAS WHERE PIPE CROSSING WILL OCCUR. WHEN PIPE SIZE IS NOT AVAILABLE USE 6" SLEEVING MATERIAL. CONFIRM CROSSINGS WITH OWNER'S REPRESENTATIVE PRIOR TO PAVING AND HARDSCAPE CONSTRUCTION.

NOTE 9:  
EXISTING IRRIGATION IN THIS AREA SHALL BE PROTECTED IN PLACE FOR CONTINUED USE. CONTRACTOR SHALL VERIFY THE EXTENT OF THE EXISTING SYSTEM AND MAKE ADJUSTMENTS TO CAP OFF OR MODIFY THE EXISTING SYSTEM TO MEET THE NEW LANDSCAPE CONDITION IF NECESSARY.

NOTE 10:  
CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING WITHIN THE DRIPLINE OF EXISTING TREES. NO MECHANICAL TRENCHING WITHIN THE DRIPLINE OF THE EXISTING TREE WILL BE ALLOWED. CONTRACTOR SHALL REFER TO ARBORIST REPORT FOR ADDITIONAL PRECAUTIONS REQUIRED FOR THE EXISTING TREES. VERIFY ALL LAYOUT IN FIELD WITH OWNER'S AUTHORIZED REPRESENTATIVE.

NOTE 11:  
CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING BACKFLOW DEVICE AND TESTING FOR PROPER OPERATION. SHOULD BACKFLOW DEVICE BE INOPERABLE OR NOT IN PLACE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF SAID BACKFLOW DEVICE. CONFIRM ANY DISCREPANCIES WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO BIDDING WORK AND PRIOR TO COMMENCING WORK.

**BENCHMARK:**

CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEIOD03)

**NOTES:**

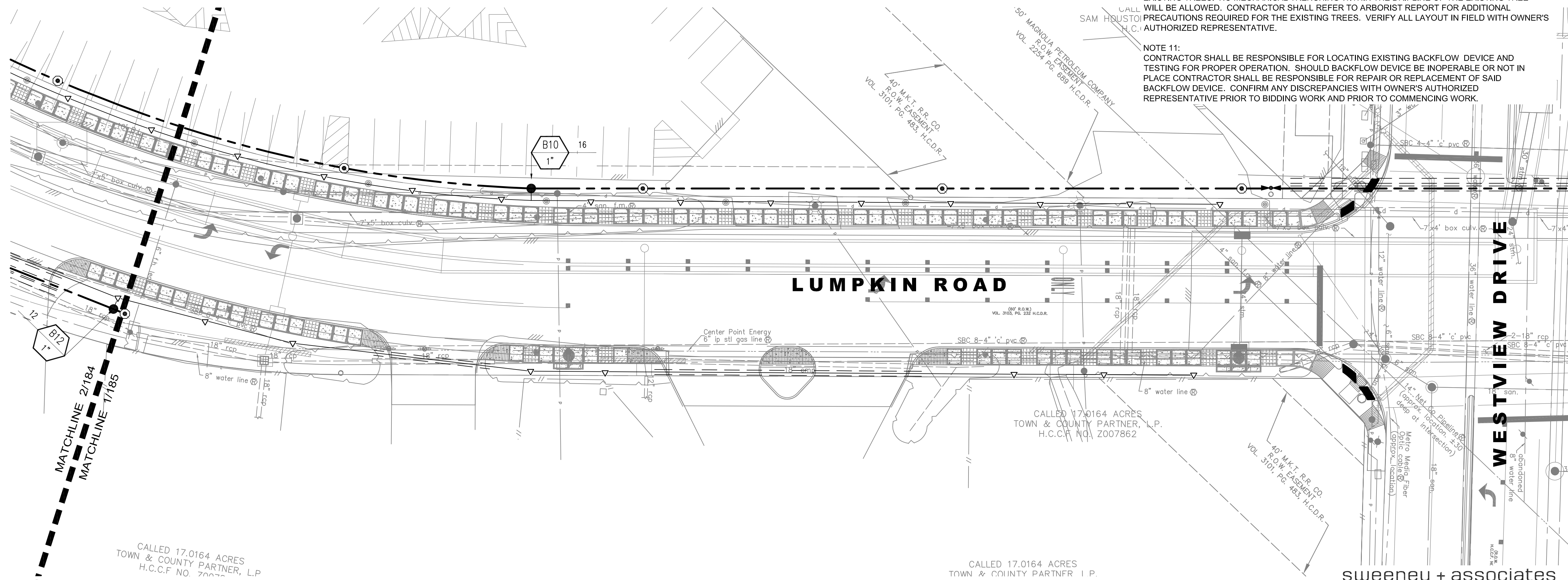
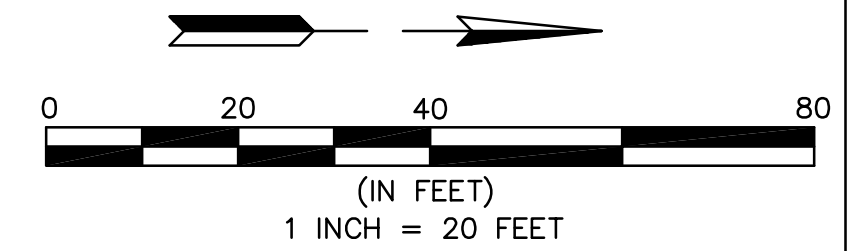
REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.

ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL

REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE

REF. 4/L5.02 FOR PLANTING SCHEDULE

ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS



22 January 2015

**SWA** SWA Group  
1245 W 18th Street  
Houston, TX 77008  
www.swagroup.com

**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEONARDY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
IRRIGATION PLAN  
19+00 TO 29+00

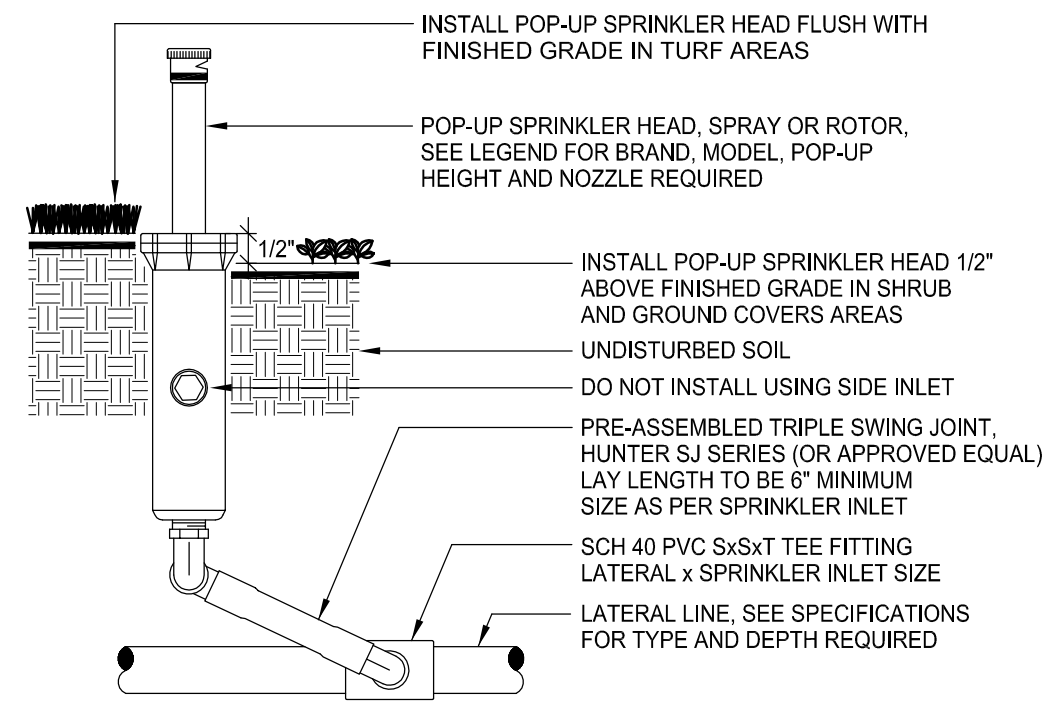
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: 1"=20'		
SHEET: 185	OF 226	

**1 IRRIGATION PLAN**  
1" = 20'

**sweeney + associates**  
IRRIGATION DESIGN AND CONSULTING  
3000 Joe DiMaggio Blvd., Bldg. 1700, Suite 61  
Round Rock, TX 78665  
e: info@sweeneyassoc.com t: (512) 306-9350  
w: www.sweeneyassoc.com f: (512) 306-9035

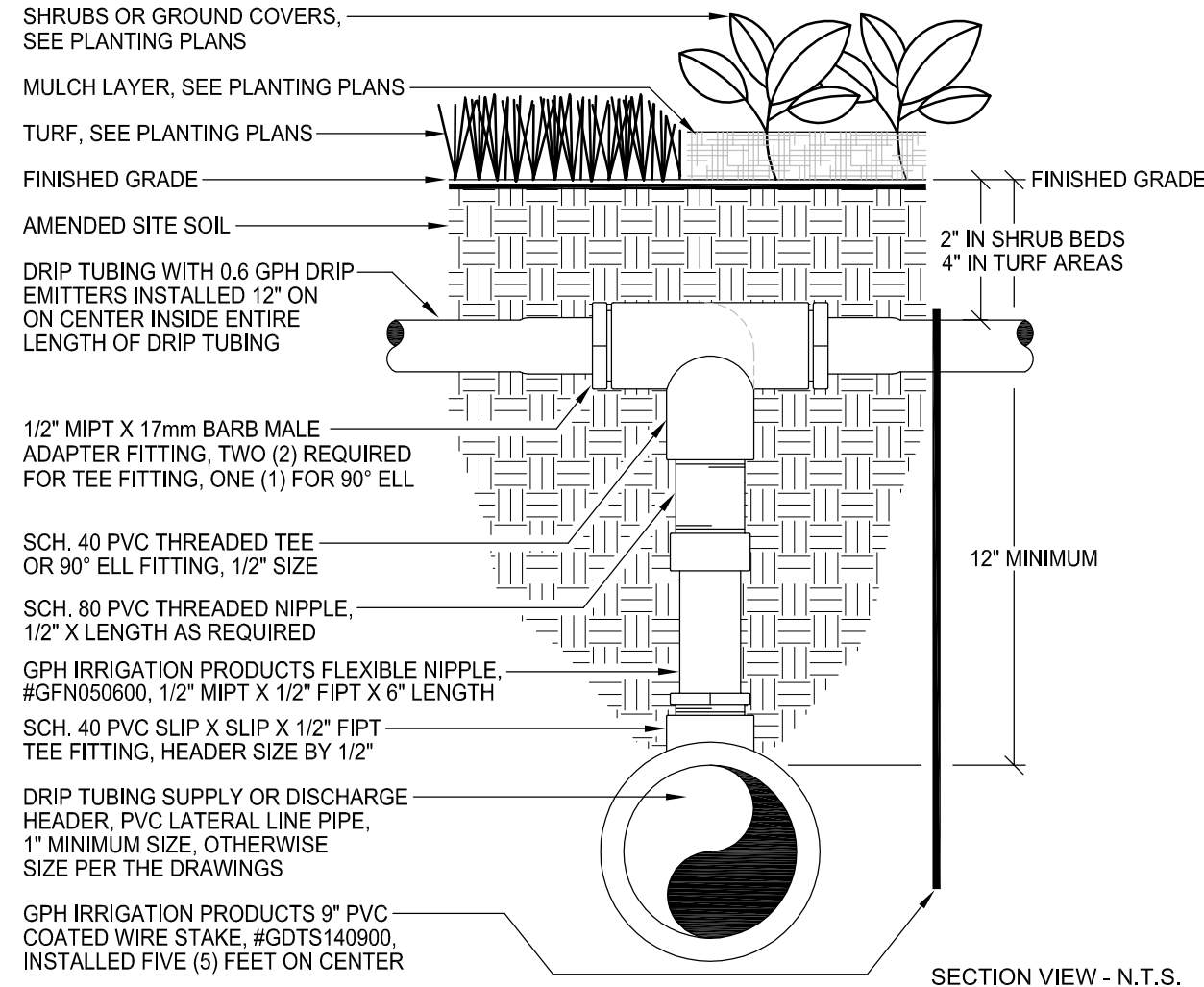
APP. REVISIONS 1 1.23.15 DATE 11:45 15\_01-23 MSALMI





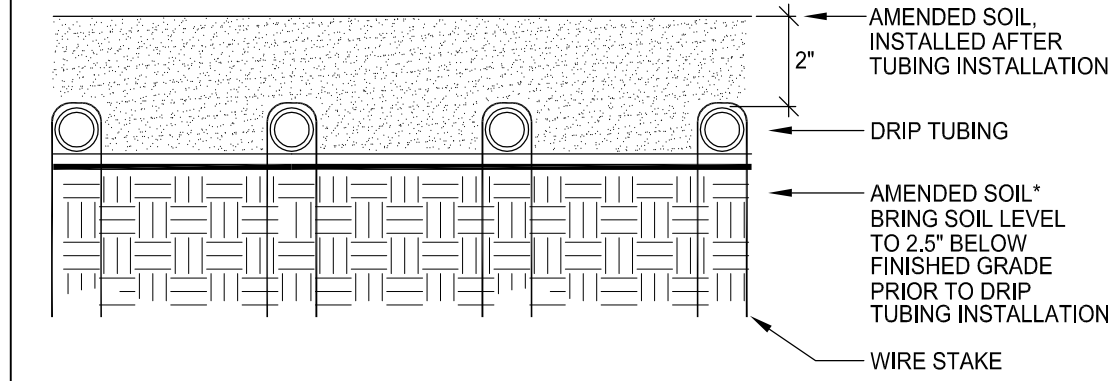
NOTE:  
INSTALL SPRINKLER HEADS 6" FROM PAVING EDGE IN SHRUB AND GROUND COVER AREAS.  
INSTALL SPRINKLER HEADS 12" FROM THE FACE OF BUILDING WALLS OR WINDOWS.  
INSTALL SPRINKLER HEADS 4" FROM PAVING EDGE IN TURF AREAS.  
INSTALL SPRINKLER HEADS PLUMB. ADJUST SPRAYS OR NOZZLE STREAM TO COVER LANDSCAPE AREA WITHOUT OVERSPRAY ONTO PAVING, FENCES, WALLS OR BUILDINGS.

SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.



NOTE:  
DRIPLINE CONNECTION REQUIRED FOR ALL CONNECTIONS BETWEEN DRIPLINE TUBING AND PVC HEADERS.  
FOR CONNECTIONS AT END RUNS OF TUBING, USE A 90° ELL FITTING AND ONE ADAPTER FITTING FOR CONNECTION.  
FOR CONNECTIONS IN THE MIDDLE OF RUNS OF TUBING, USE A TEE FITTING AND TWO ADAPTER FITTINGS FOR THE CONNECTION.

SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.



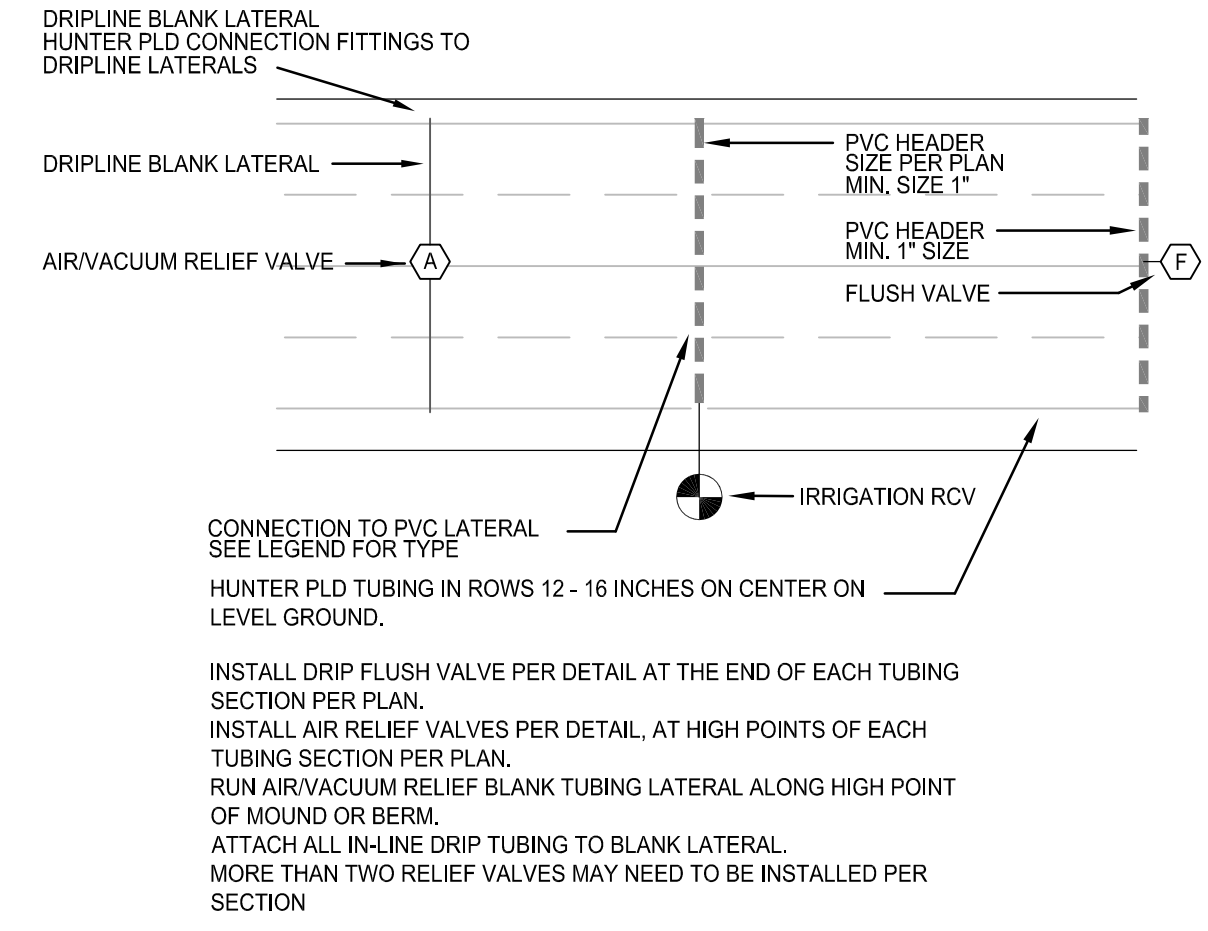
RECOMMENDED INSTALLATION:  
TO INSURE EVEN PARALLEL AND LEVEL TUBING ROWS IT IS RECOMMENDED THAT THE SOIL LEVEL IN THE PLANTER AREAS BE BROUGHT TO 1 1/2" BELOW FINISHED GRADE AND PROPERLY COMPACTED AS PER THE LANDSCAPED DRAWINGS PRIOR TO THE INSTALLATION OF THE TUBING.  
INSTALL TUBING AS INDICATED ON THESE DRAWINGS AND SECURE TO GRADE USING WIRE HOOP STAKES AT 5 FEET ON CENTER SPACING.  
BACKFILL FINAL 2" OF SOIL OVER THE TUBING AFTER INSTALLATION OF THE TUBING

SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.

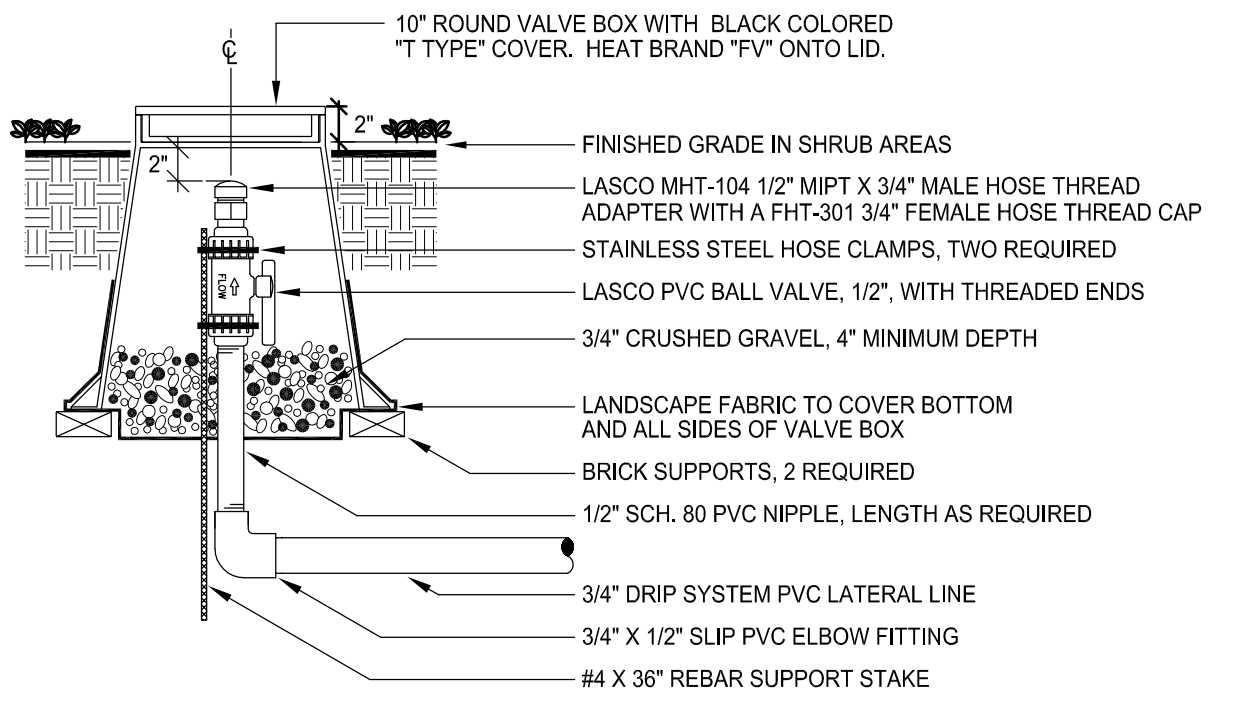
**(A) POP-UP SPRINKLER**

**(B) DRIPLINE CONNECTION TO PVC**

**(C) DRIPLINE LAYOUT**

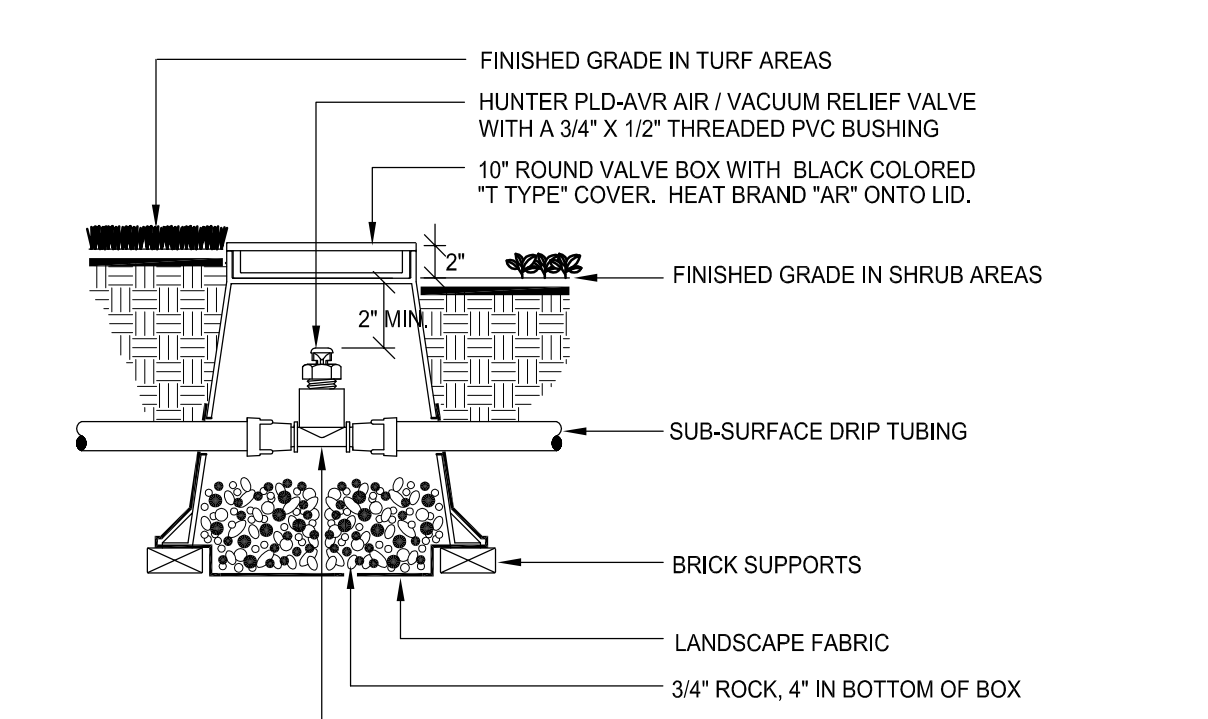


SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.



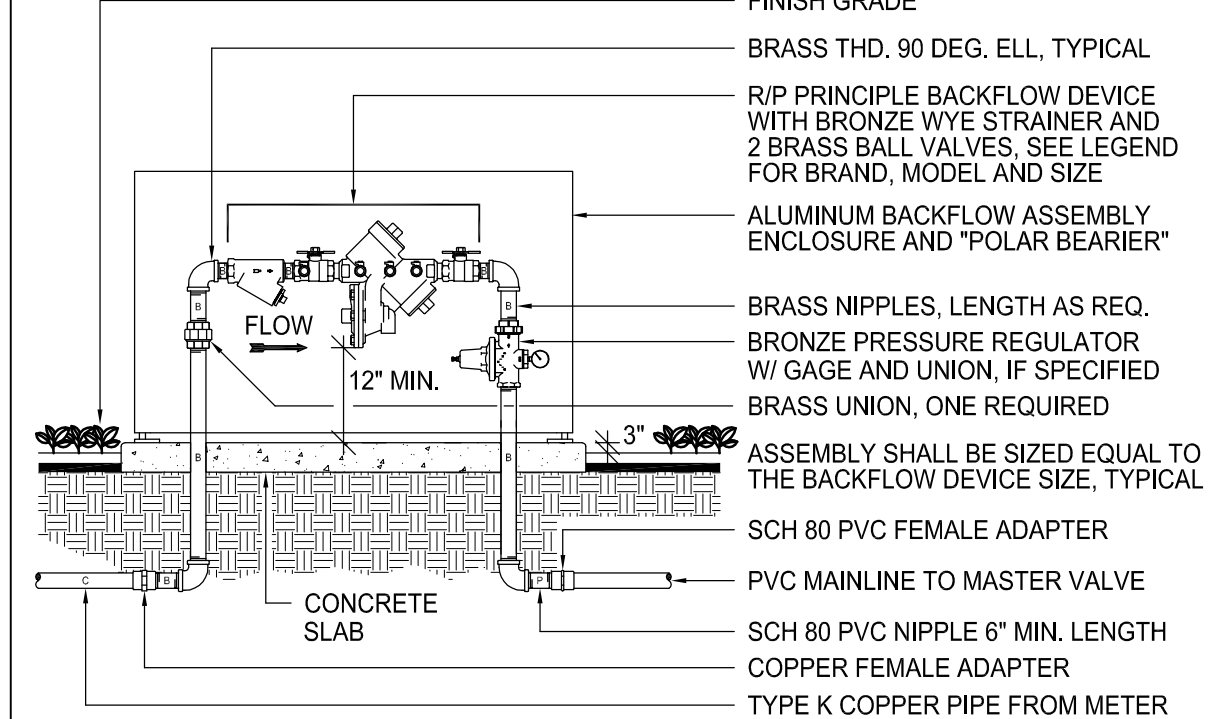
NOTE:  
USE STANDARD OPENINGS PROVIDED IN VALVE BOX FOR PIPE, DO NOT CUT BOX.  
USE AN APPROVED, NON-HARDENING, TEFLON ASSEMBLY PASTE ON ALL THREADED FITTINGS.

SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.



NOTE:  
USE STANDARD OPENINGS PROVIDED IN VALVE BOX FOR PIPE, DO NOT CUT BOX.

SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.



NOTE:  
CONCRETE SLAB SHALL BE MINIMUM 4" THICK, 18" WIDE AND EXTEND AT LEAST 8" PAST THE BACKFLOW ASSEMBLY PIPING. IF BACKFLOW ENCLOSURE IS SPECIFIED, THE CONCRETE SLAB SHALL BE THE SIZE REQUIRED BY THE MANUFACTURER.

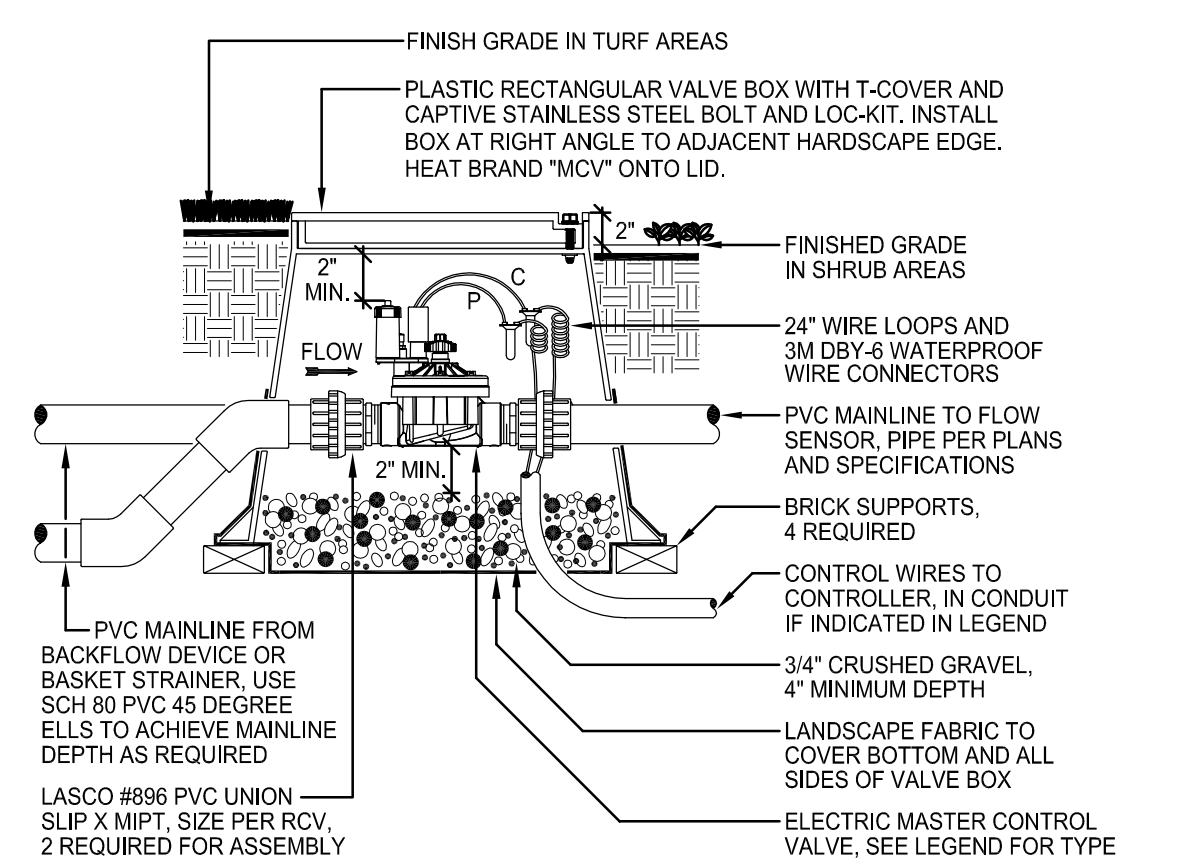
SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.

**(D) DRIPLINE LAYOUT**

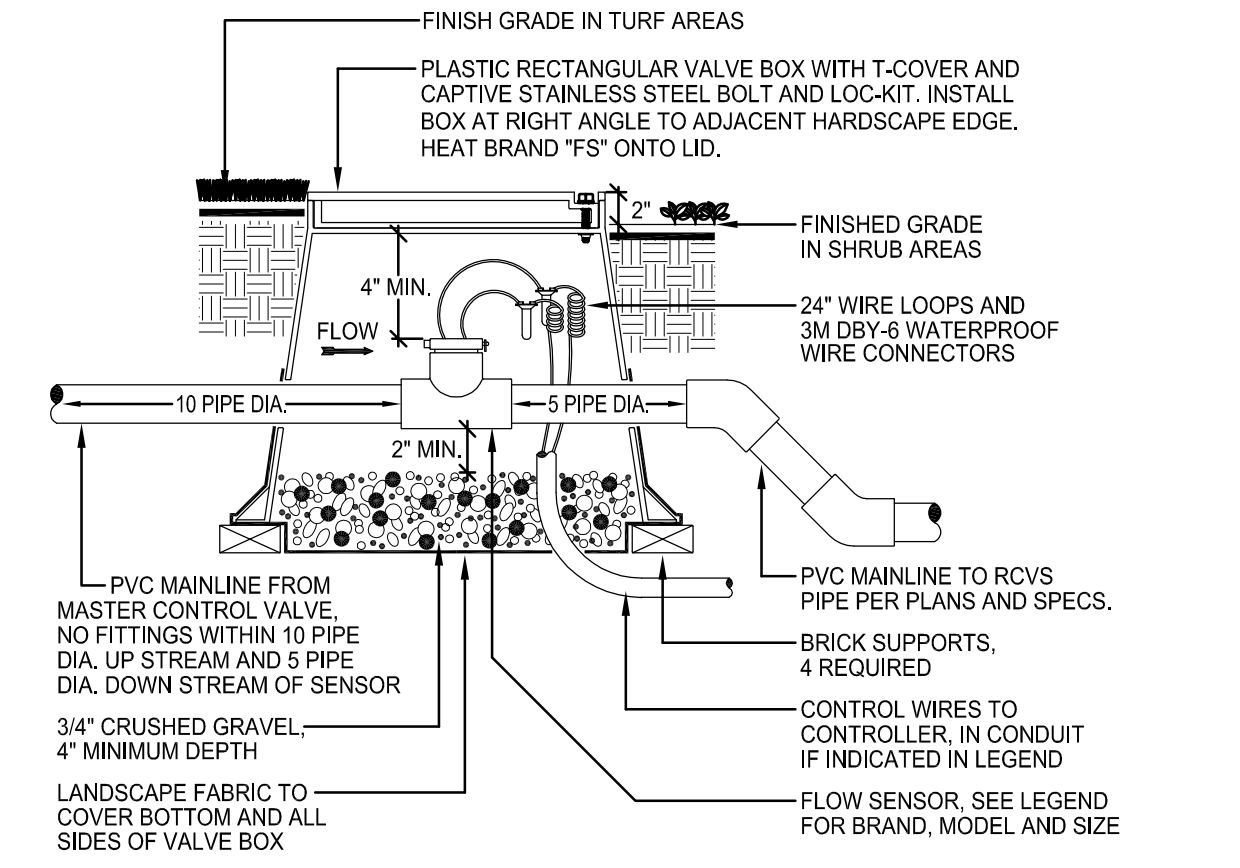
**(E) DRIP MANUAL FLUSH VALVE**

**(F) DRIP AIR RELIEF VALVE**

**(G) R/P TYPE BACKFLOW**

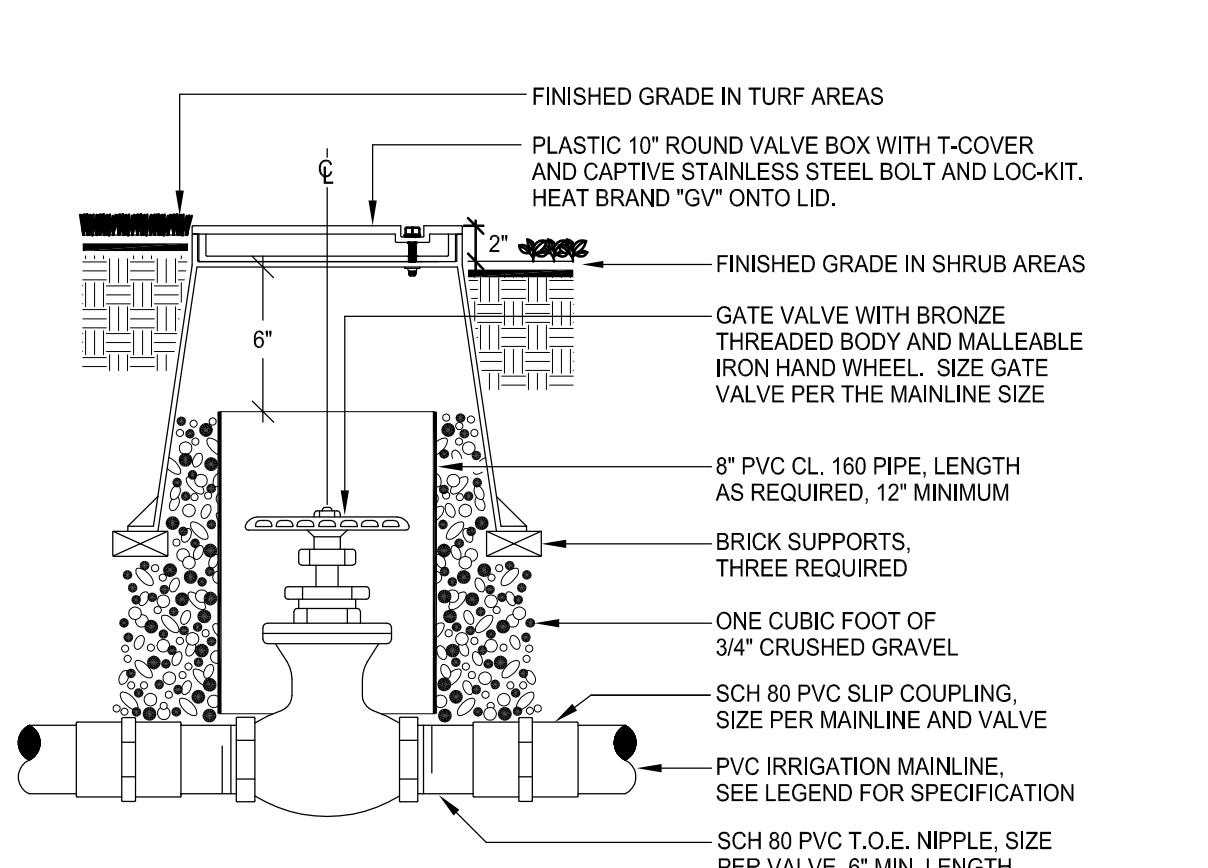


SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.



NOTE:  
USE STANDARD OPENINGS PROVIDED IN VALVE BOX FOR PIPE, DO NOT CUT BOX.  
USE SCH 80 PVC 45 DEGREE ELLS TO ACHIEVE MAINLINE DEPTH AS REQUIRED.

SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.



SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.

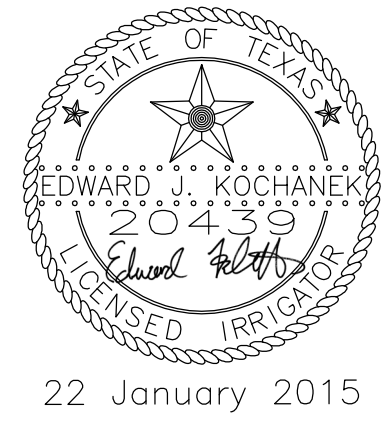
**(H) MASTER CONTROL VALVE**

**(I) FLOW SENSOR**

**(J) ISOLATION VALVE**

**BENCHMARK:**  
CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEOID03)

**NOTES:**  
REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.  
ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL  
REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE  
REF. 4/L5.02 FOR PLANTING SCHEDULE  
ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS



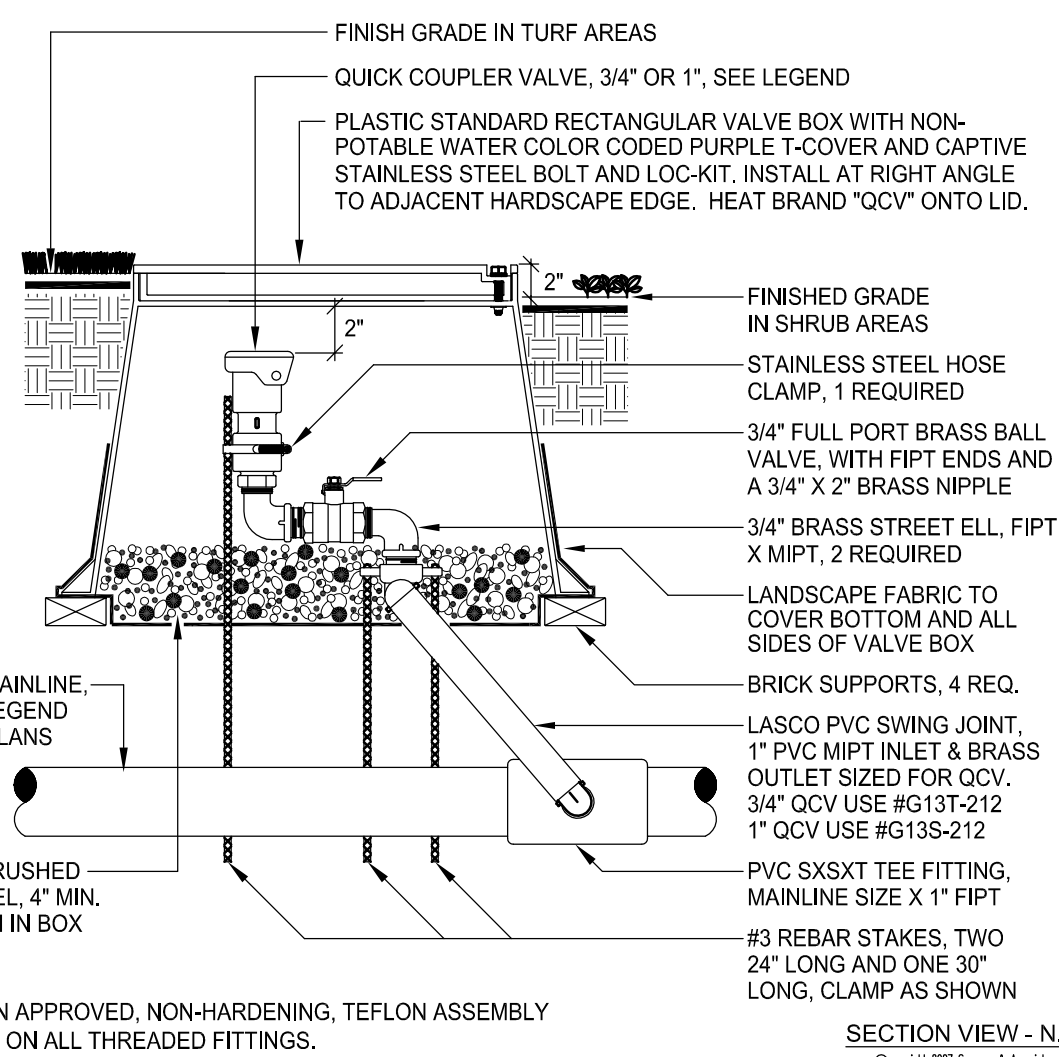
22 January 2015

**SWA Group**  
1245 W 18th Street  
Houston, TX 77008  
www.swagroup.com

**Lockwood, Andrews & Newnam, Inc.**  
A LEONARDY COMPANY

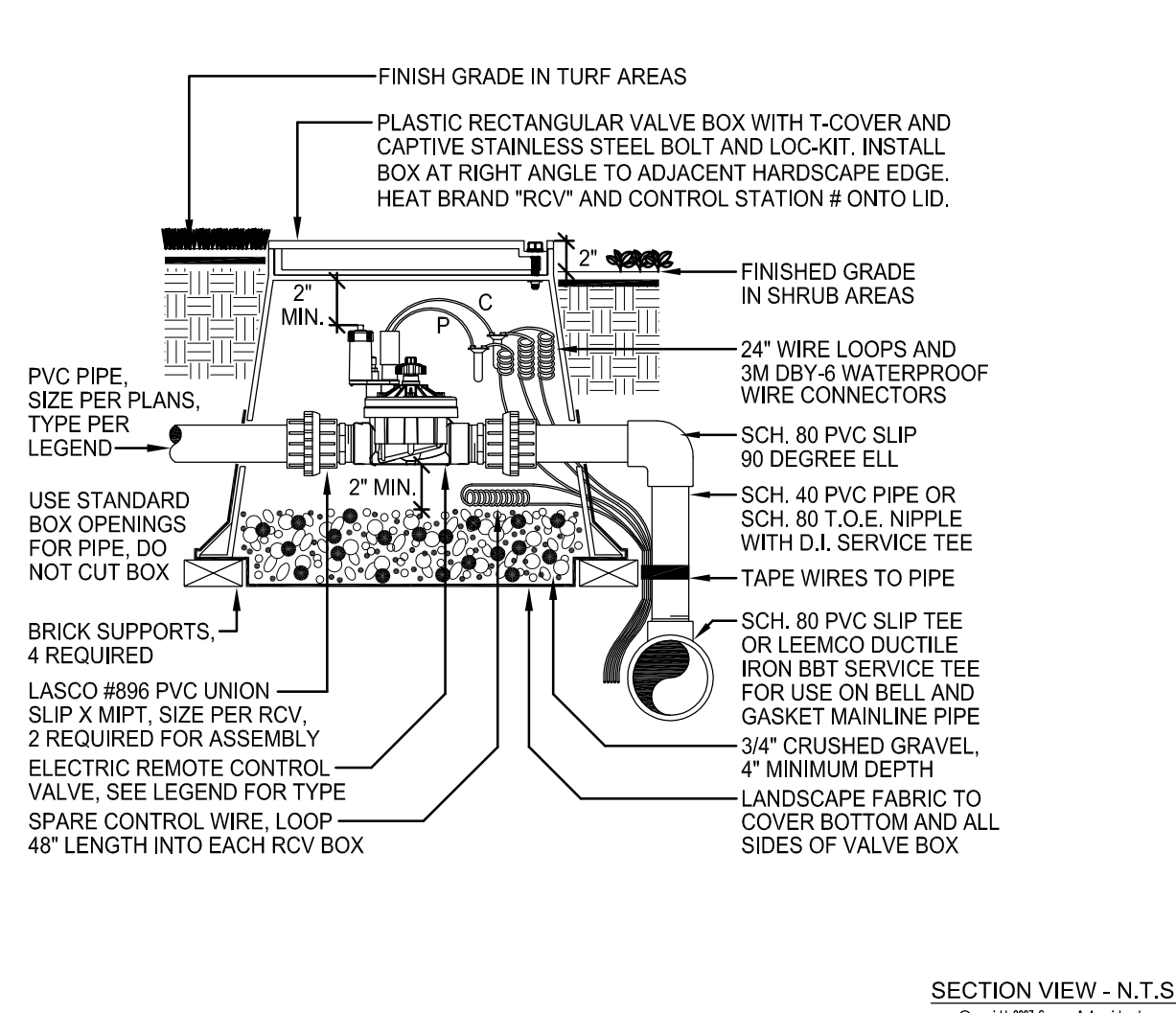
LUMPKIN ROAD  
N-T17000-0012-3  
IRRIGATION DETAILS

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: HORZ: 1"=20'		
SHEET: 187	OF 226	



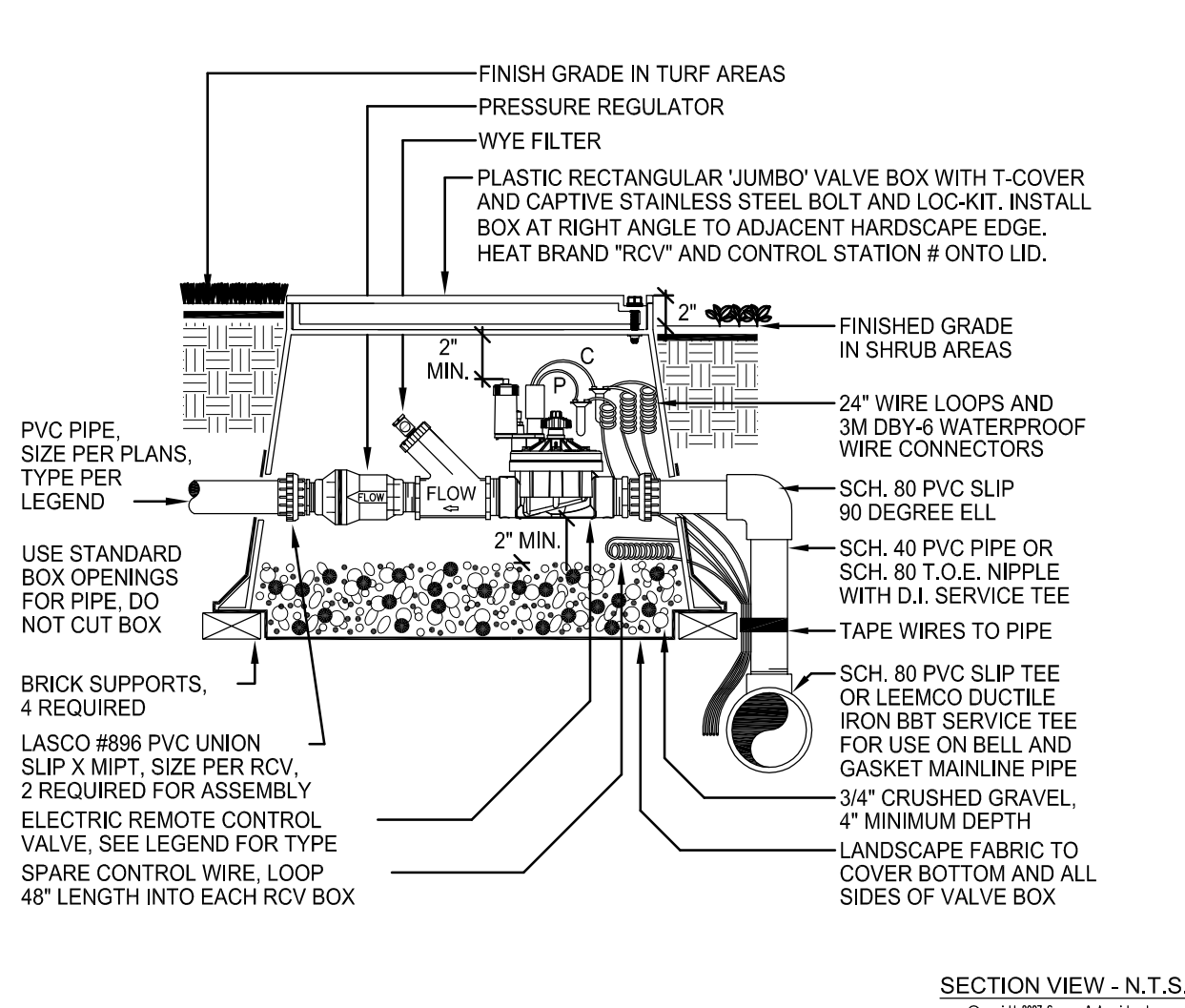
SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.

**(K) QUICK COUPLER VALVE**



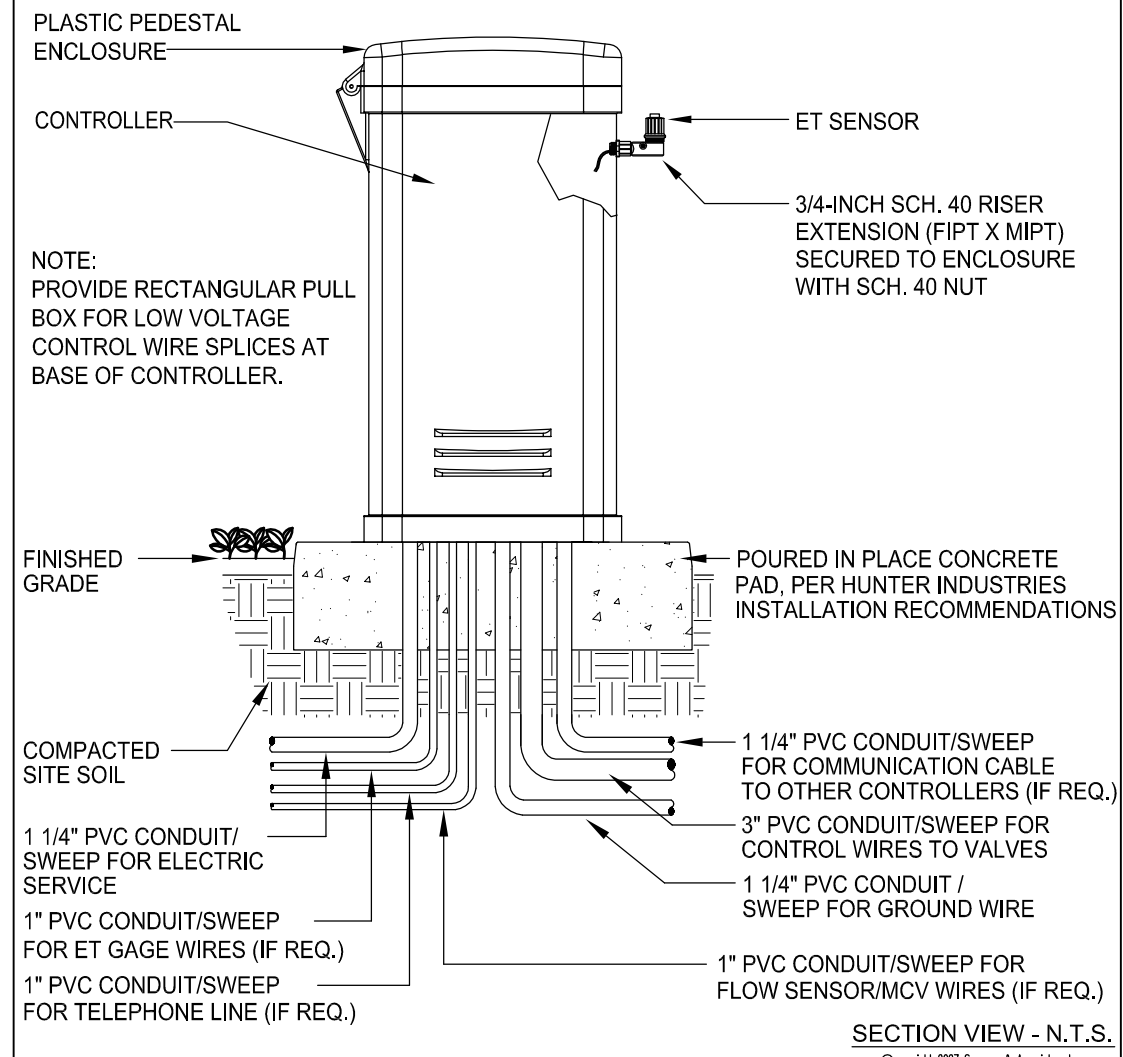
SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.

**(L) REMOTE CONTROL VALVE**



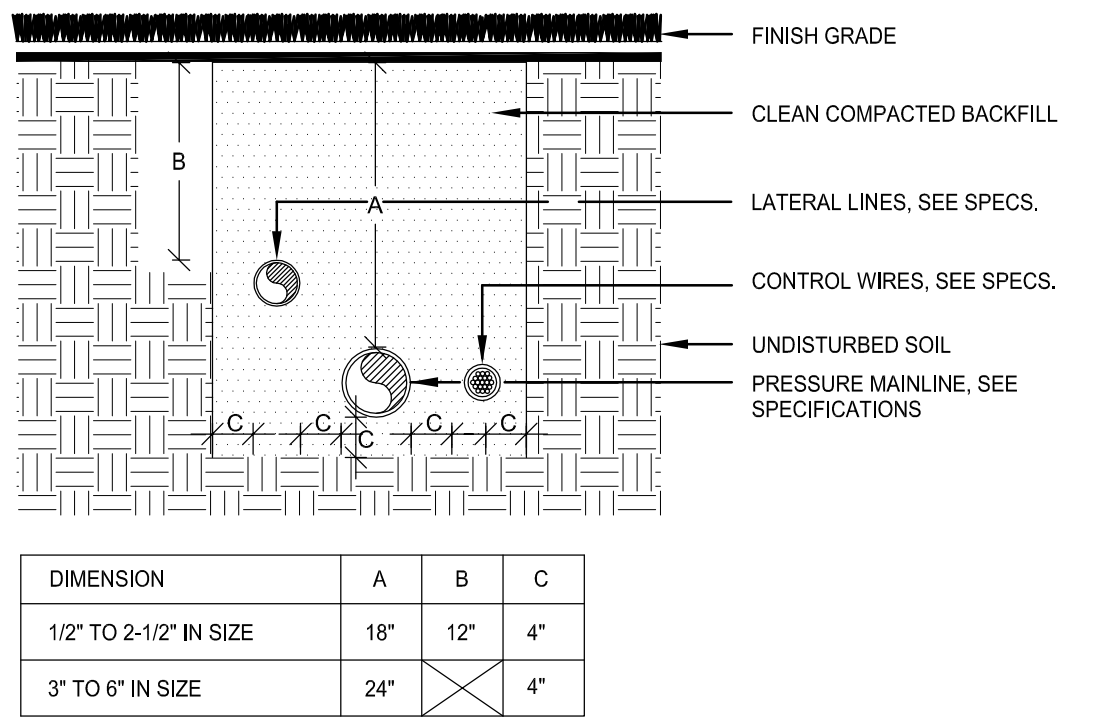
SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.

**(M) DRIP R.C.V. ASSEMBLY**



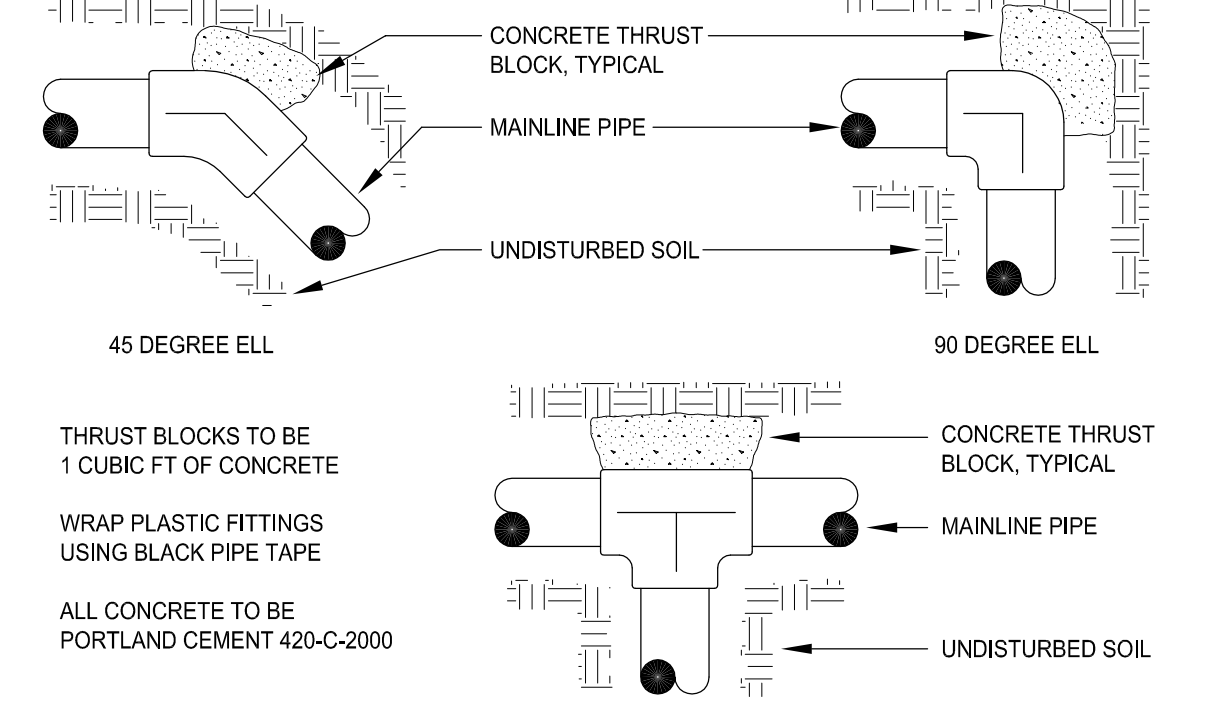
SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.

**(N) CONTROLLER WITH ENCL.**



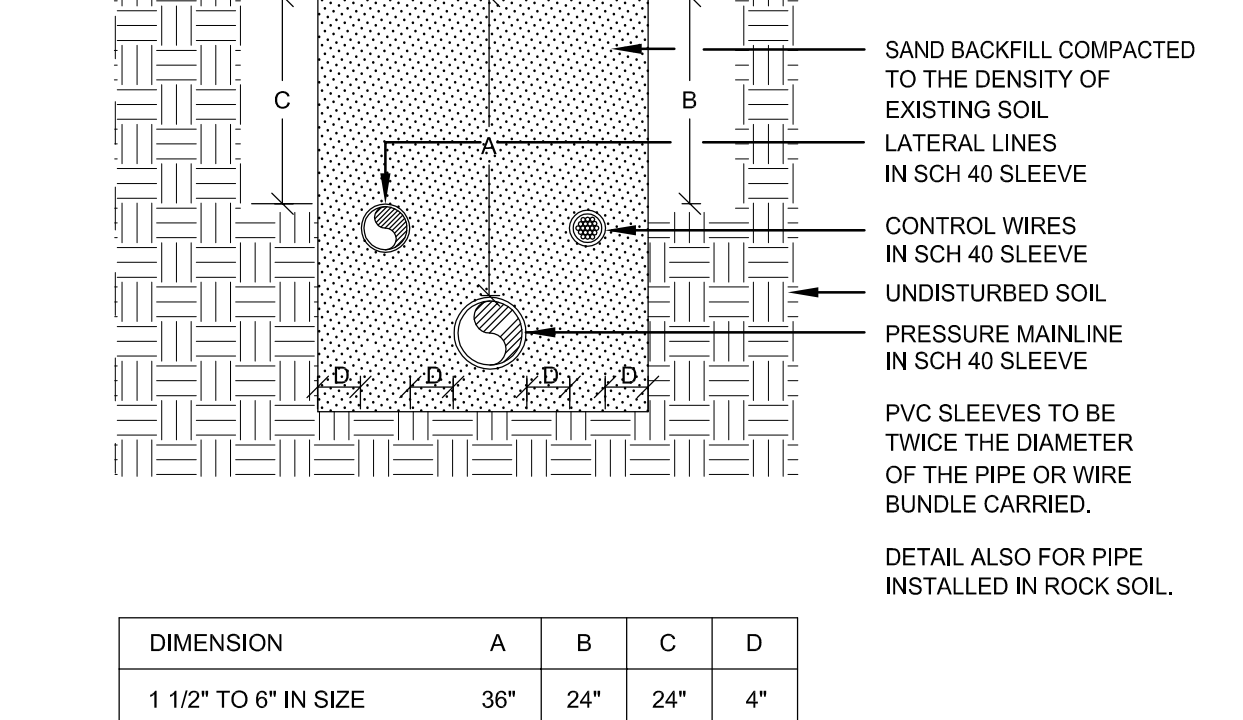
SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.

**(O) PIPE INSTALLATION**



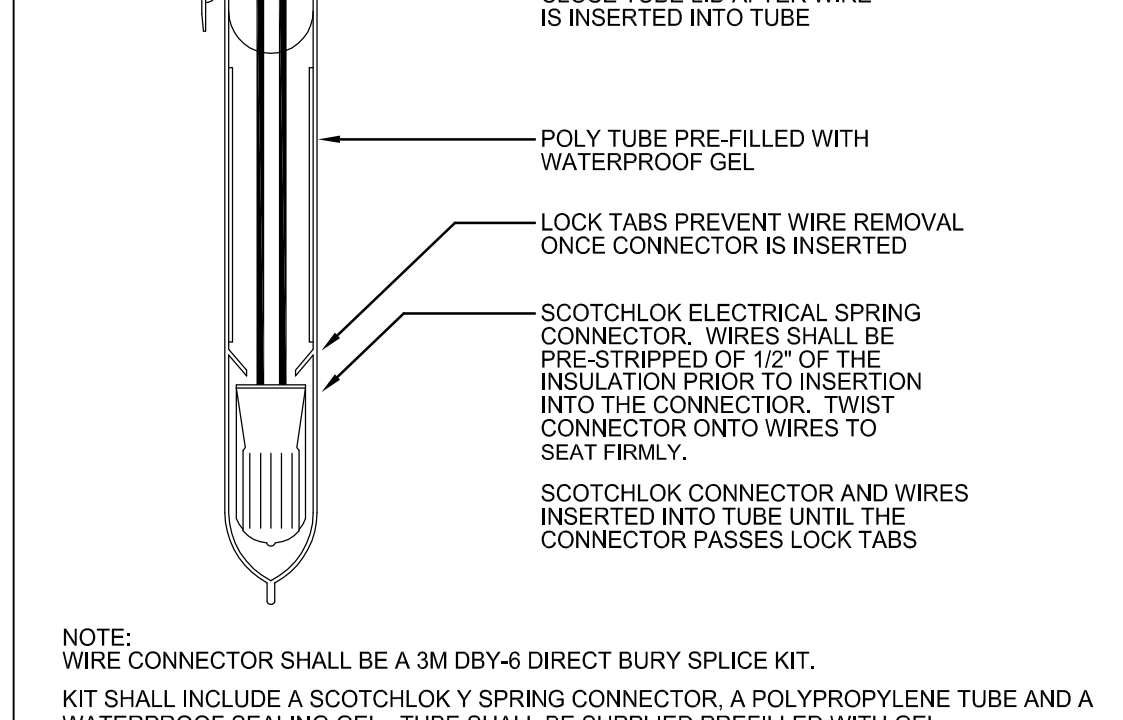
PLAN VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.

**(P) MAINLINE THRUST BLOCKS**



SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.

**(Q) PIPE UNDER HARDSCAPE**

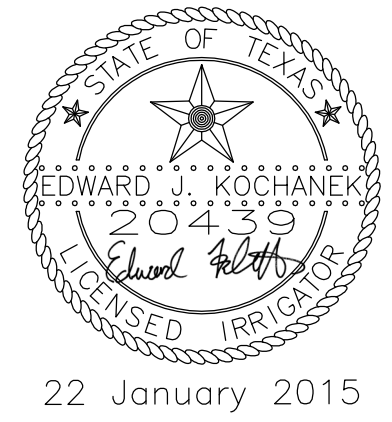


SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.

**(R) WIRE CONNECTORS**

**BENCHMARK:**  
CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GE01D03)

**NOTES:**  
REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.  
ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL  
REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE  
REF. 4/L5.02 FOR PLANTING SCHEDULE  
ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS



**SWA Group**  
1245 W 18th Street  
Houston, TX 77008  
www.swagroup.com

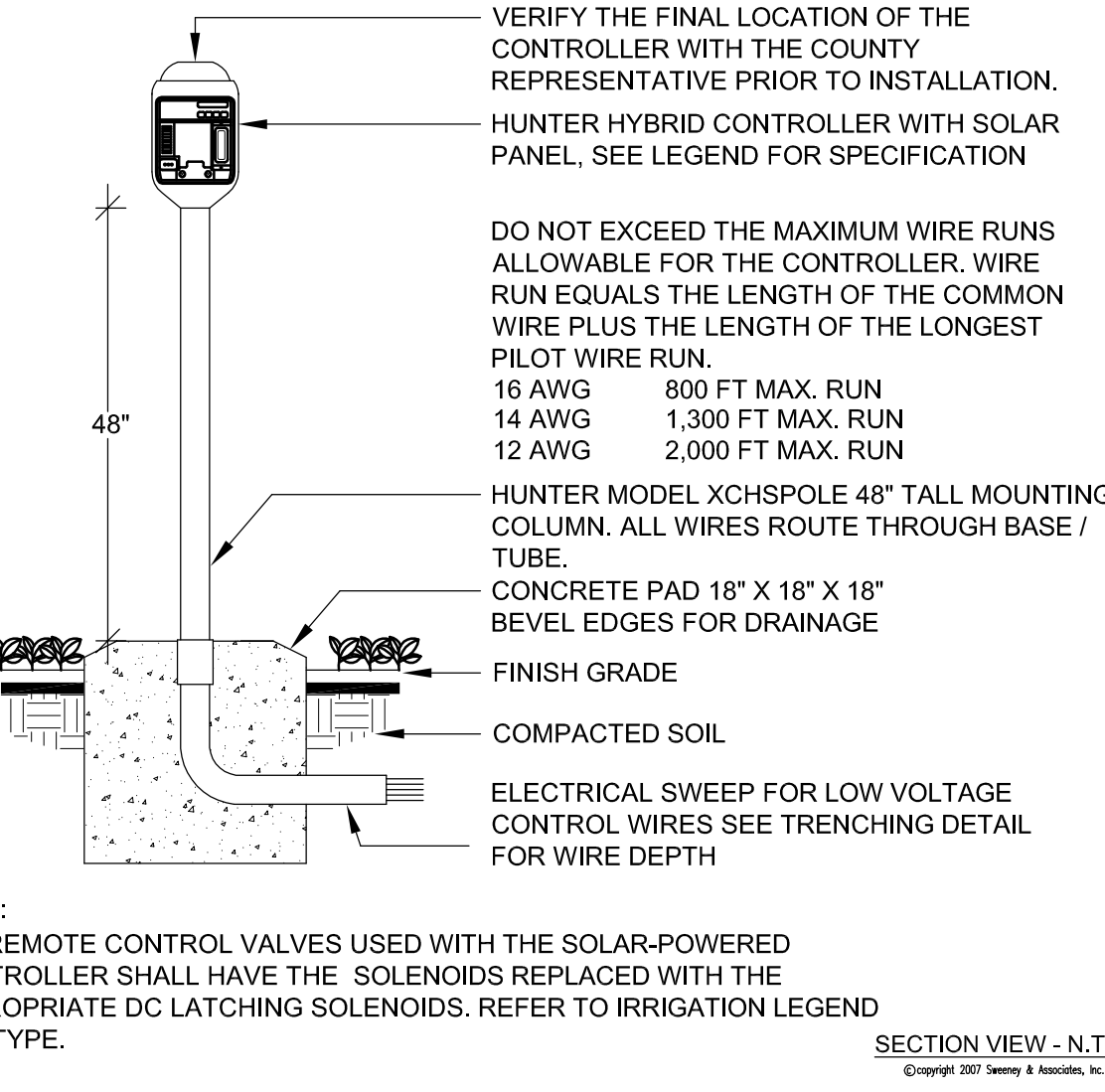
**Lockwood, Andrews & Newnam, Inc.**  
A LEONARDY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
IRRIGATION DETAILS

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

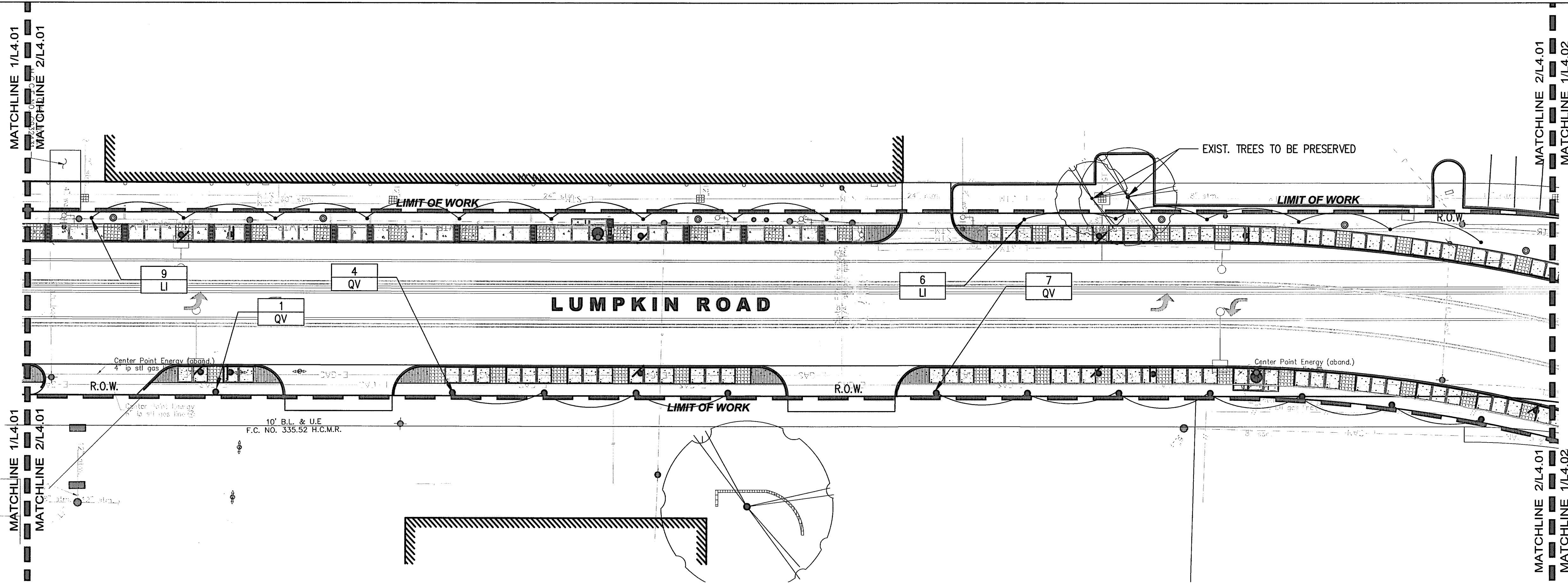
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO.:	FACTORY
DRAWING SCALE:	CITY DWG NO.
VERT: 1"=20'	
SHEET: 188 OF 226	



SECTION VIEW - N.T.S.  
Copyright 2007 Seamy & Associates, Inc.

**(S) SOLAR POWERED CONTROLLER**



**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV.=82.18 FEET (NAVD 88\GEOID03)

**NOTES:**  
 REFER TO CIVIL FOR REPAIR OF DISTURBED  
 AREAS.

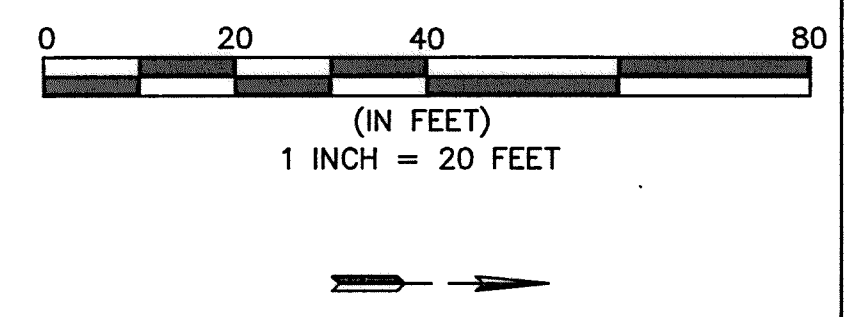
ONLY SIDEWALK CONC. TO RECEIVE 4"  
 SMOOTH TROWEL BOARDER, ALL OTHER CONC.  
 SHALL RECEIVE MED. BROOM FINISH  
 PERPENDICULAR TO DIRECTION OF TRAVEL

REF. 4/L2.02 FOR MATERIAL AND FURNISHING  
 SCHEDULE

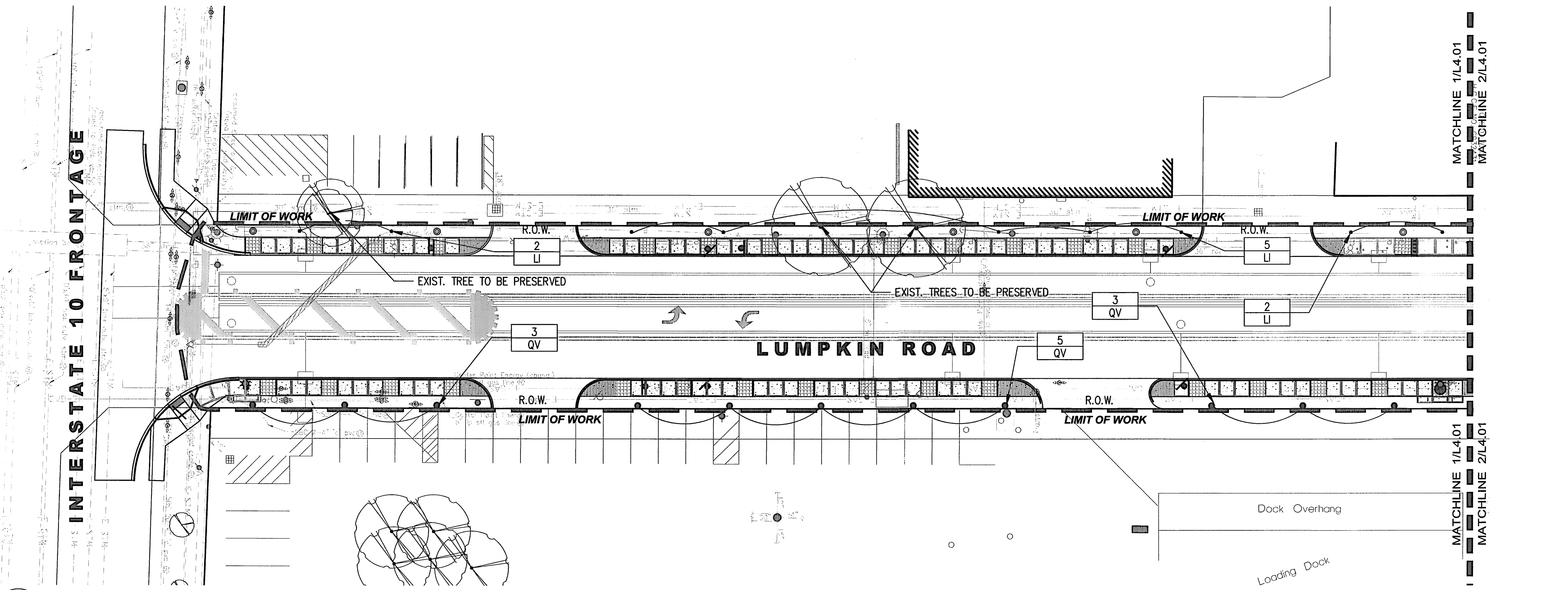
REF. 4/L5.02 FOR PLANTING SCHEDULE

ALIGN PAVING JOINTS TO EDGE OF PAVEMENT,  
 RAISED CONC. BAND, EXIST. JOINTS, AND  
 PAVERS

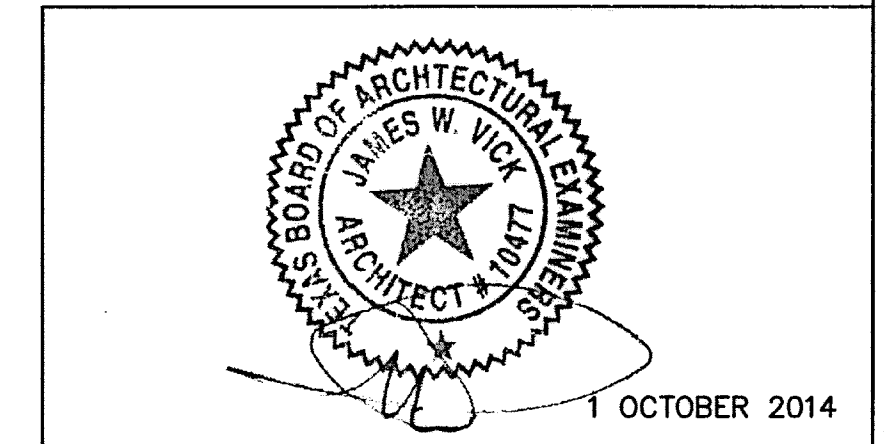
EXIST. POWER POLES TO BE COORDINATED  
 WITH CENTERPOINT ENERGY AND CIVIL



2 PLANTING PLAN  
 1" = 20'



1 PLANTING PLAN  
 1" = 20'



SWA Group  
 1245 W 18th Street  
 Houston, TX 77008  
 www.swagroup.com

**LAN** Lockwood, Andrews & Newnam, Inc.  
 A LEO A DALY COMPANY

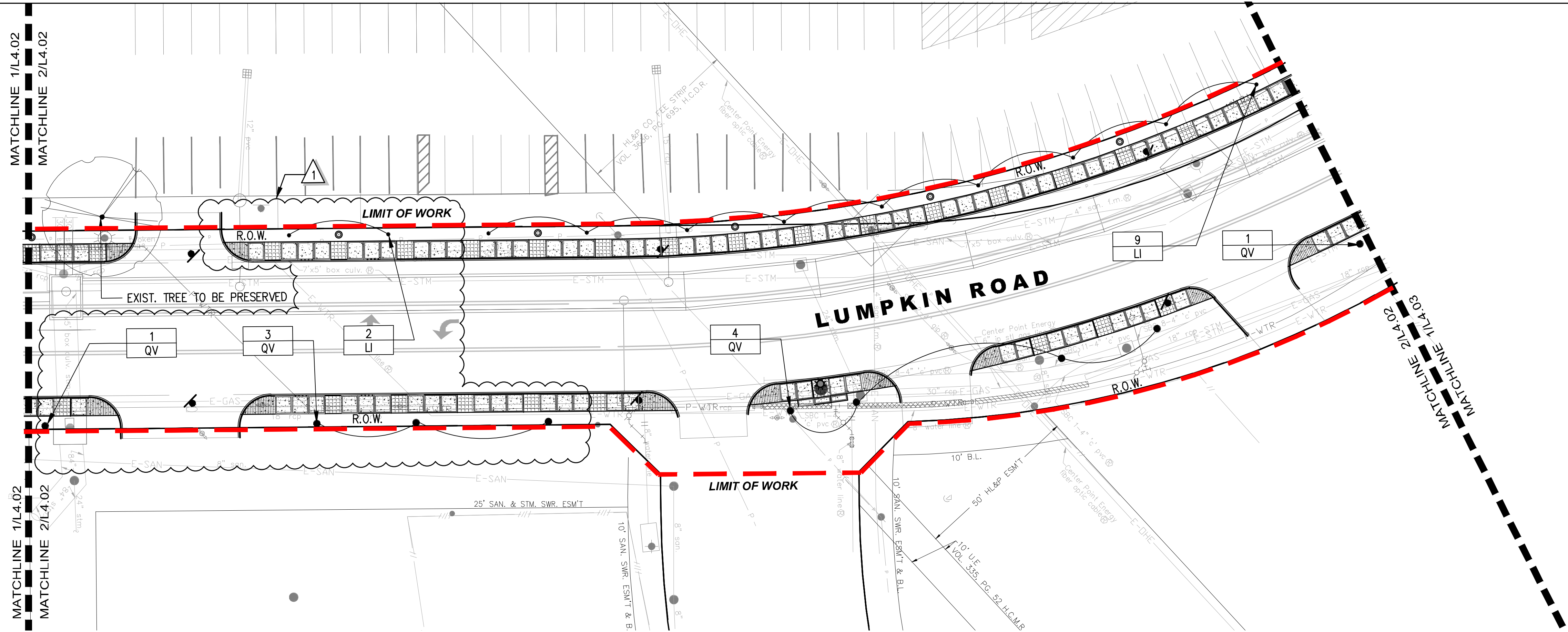
LUMPKIN ROAD  
 N-T17000-0012-3  
 PLANTING PLAN  
 1+00 TO 12+00  
 L4.01

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWR

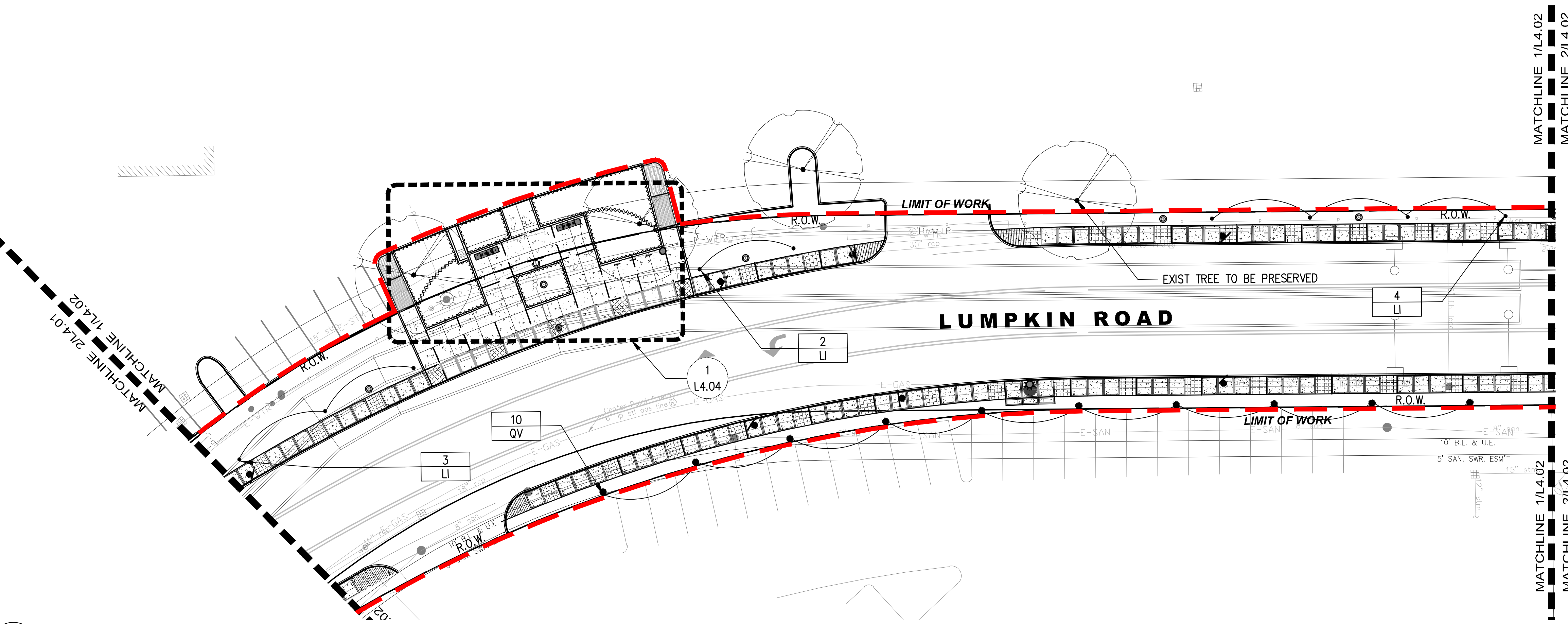
FILE NO.:	FACILITY
DRAWING SCALE:	QTY DWG NO.
VERT: HORZ: 1"=20'	
SHEET: 189 OF 226	

APP. REVISIONS DATE No. 14\_10-01 04.36 CGENTILE

\\Hou\fs801\data\Project\RHT\RHTSA01 Memorial W04 Lumkin CD\4 Lumkin CD\4 Drawings\Graphics\AutoCAD\Sheets\L4\_L4.01 PLANTING PLAN.dwg



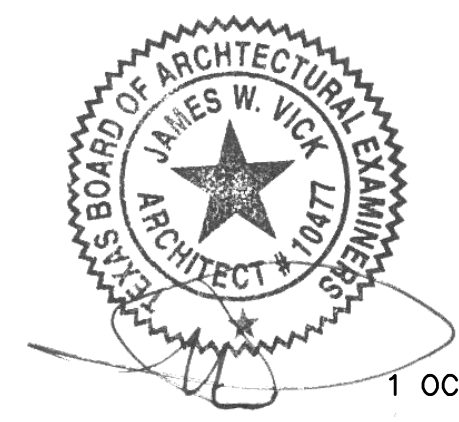
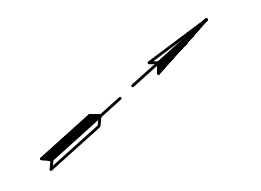
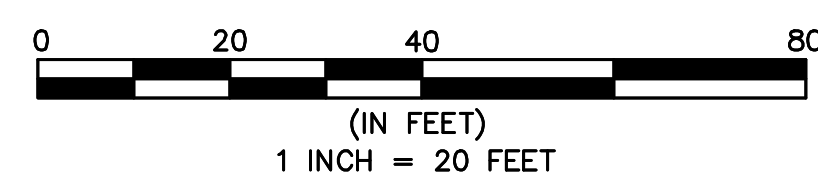
2 PLANTING PLAN  
1" = 20'



1 PLANTING PLAN  
1" = 20'

**BENCHMARK:**  
CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEOID03)

**NOTES:**  
REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.  
ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL  
REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE  
REF. 4/L5.02 FOR PLANTING SCHEDULE  
ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS  
EXIST. POWER POLES TO BE COORDINATED WITH CENTERPOINT ENERGY AND CIVIL



1 OCTOBER 2014

**SWA Group**  
1245 W 18th Street  
Houston, TX 77008  
www.swagroup.com

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
PLANTING PLAN  
12+00 TO 19+00  
L4.02

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: HORIZ: 1"=20'	
SHEET: 190 OF 226	

APP. REVISIONS  
 01 1/23/15 REVISION 1  
 No. DATE  
 CGENTILE  
 03:13  
 14\_10-01  
 \\HOUSTON\DATA\Project\RHIT\RHITS401 Memorial W04 Lumpkin CD\4 Drawings\Graphics\AutoCAD\Sheets\L4\L4.02 PLANTING PLAN.dwg

**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV.=82.18 FEET (NAVD 88\GEIOD3)

**NOTES:**  
 REFER TO CIVIL FOR REPAIR OF DISTURBED  
 AREAS.

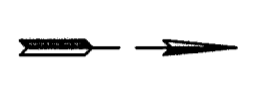
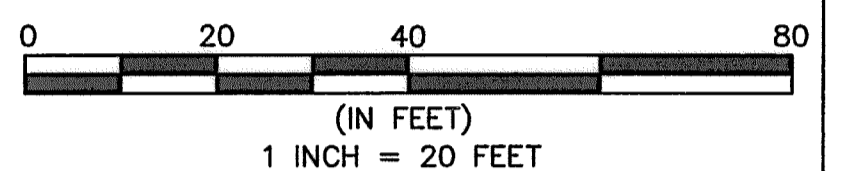
ONLY SIDEWALK CONC. TO RECEIVE 4"  
 SMOOTH TROWEL BOARDER, ALL OTHER CONC.  
 SHALL RECEIVE MED. BROOM FINISH  
 PERPENDICULAR TO DIRECTION OF TRAVEL

REF. 4/L2.02 FOR MATERIAL AND FURNISHING  
 SCHEDULE

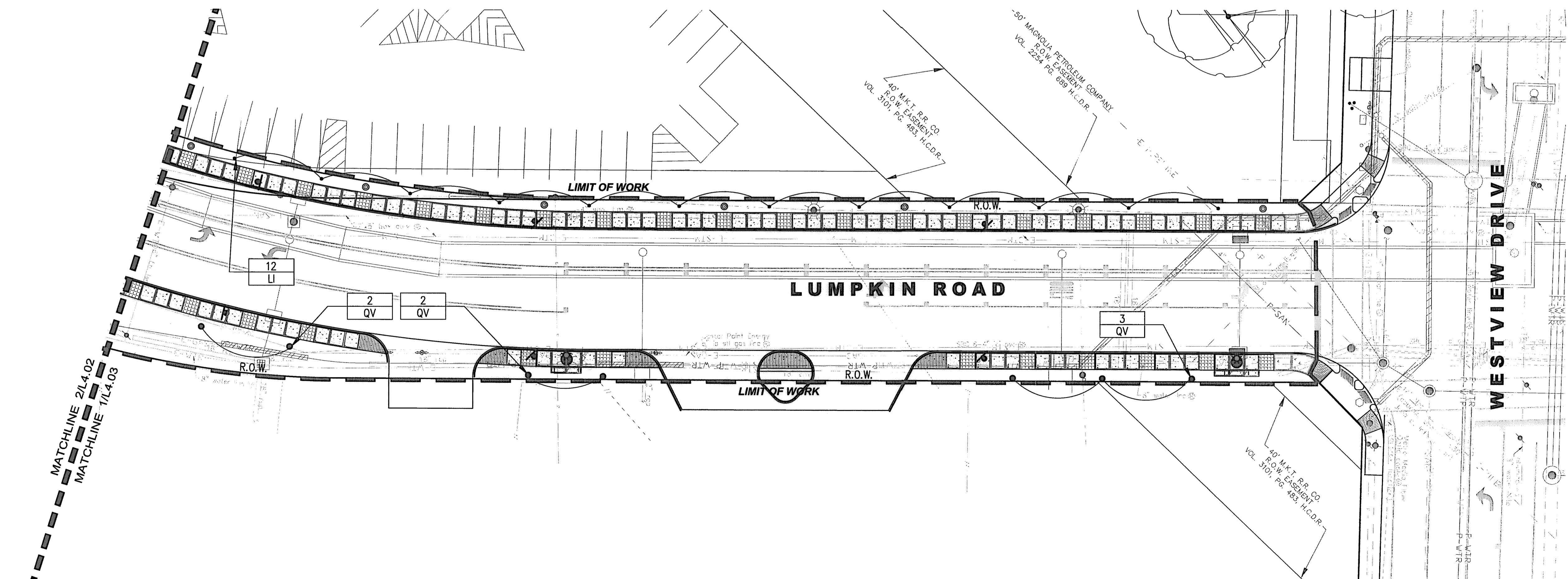
REF. 4/L5.02 FOR PLANTING SCHEDULE

ALIGN PAVING JOINTS TO EDGE OF PAVEMENT,  
 RAISED CONC. BAND, EXIST. JOINTS, AND  
 PAVERS

EXIST. POWER POLES TO BE COORDINATED  
 WITH CENTERPOINT ENERGY AND CIVIL



APP.	REVISIONS	DATE



**1 PLANTING PLAN**  
 1" = 20'

OCTOBER 2014

**SWA Group**  
 1245 W 18th Street  
 Houston, TX 77008  
 www.swagroup.com

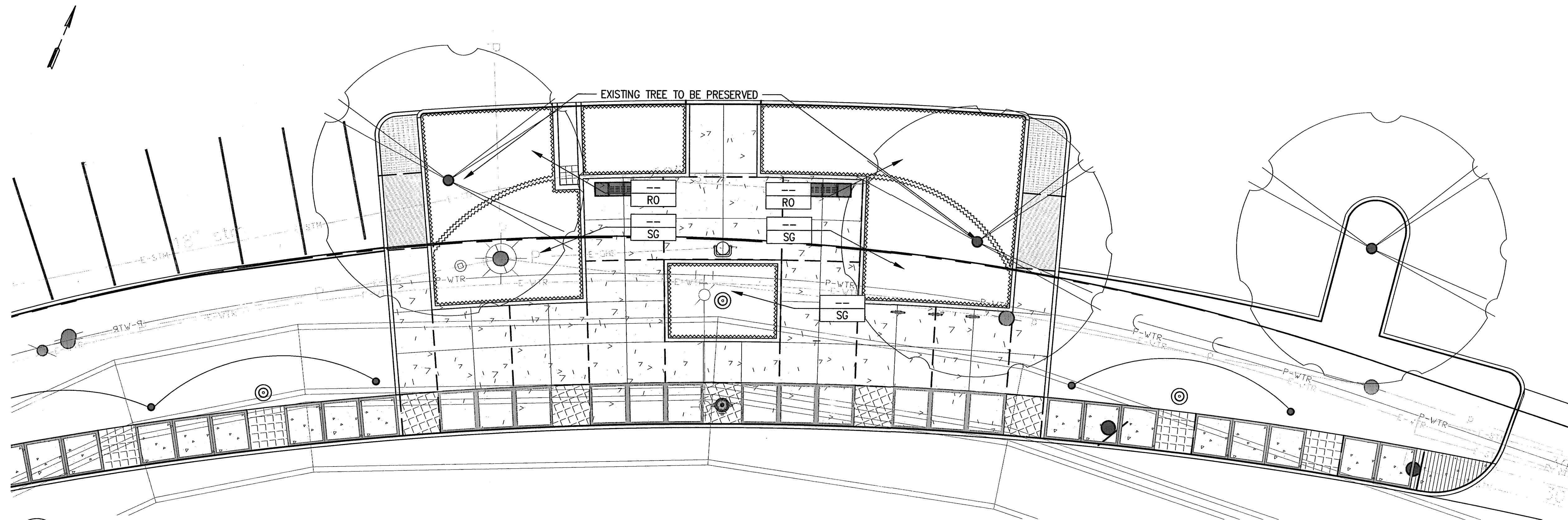
**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

**LUMPKIN ROAD**  
 N-T17000-0012-3

PLANTING PLAN  
 19+00 TO 29+00  
 L4.03

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	QTY DWG NO.	
VERT: HORZ: 1"=20'	191 OF 226	
SHEET:		

14\_10-01  
 04:36  
 \\HOU1FS801\DATA\Project\RH\17\RH17S401 Memorial W04 Lumpkin CD\Drawings\Graphics\AutoCAD\Sheets\L4\L4.03 PLANTING PLAN.dwg



1 PLANTING PLAN ENLARGEMENT  
1/8" = 1'-0"

**BENCHMARK:**  
CITY OF HOUSTON SURVEY MARKER STAMPED 4958/7710 LOCATED AT EAST SIDE OF LUMPKIN RD., 110 FEET SOUTHWEST OF LARSTON DR. INTERSECTION IN KEYMAP 449Z ELEV.=82.18 FEET (NAVD 88\GEOID03)

**NOTES:**  
REFER TO CIVIL FOR REPAIR OF DISTURBED AREAS.  
ONLY SIDEWALK CONC. TO RECEIVE 4" SMOOTH TROWEL BOARDER, ALL OTHER CONC. SHALL RECEIVE MED. BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL  
REF. 4/L2.02 FOR MATERIAL AND FURNISHING SCHEDULE  
REF. 4/L5.02 FOR PLANTING SCHEDULE  
ALIGN PAVING JOINTS TO EDGE OF PAVEMENT, RAISED CONC. BAND, EXIST. JOINTS, AND PAVERS  
EXIST. POWER POLES TO BE COORDINATED WITH CENTERPOINT ENERGY AND CIVIL

APP.	REVISIONS	DATE

CGENTILE  
04:36  
14\_10-01

1 OCTOBER 2014

SWA Group  
1245 W 19th Street  
Houston, TX 77008  
www.swagroup.com

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
PLANTING PLAN  
ENLARGEMENT  
12+00  
L4.04

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: HORZ: 1"=20'		
SHEET: 194 OF 226		

\\Hou1s801\data\Project\RH1\RH1S401 Memorial W04 Lumpkin CD\4 Drawings\Graphics\AutoCAD\Sheets\L4\L4.04 PLANTING PLAN ENLARGEMENT.dwg



BENCHMARK:  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV.=82.18 FEET (NAVD 88\GEIOD3)

NOTES:  
 REFER TO CIVL FOR REPAIR OF DISTURBED  
 AREAS.

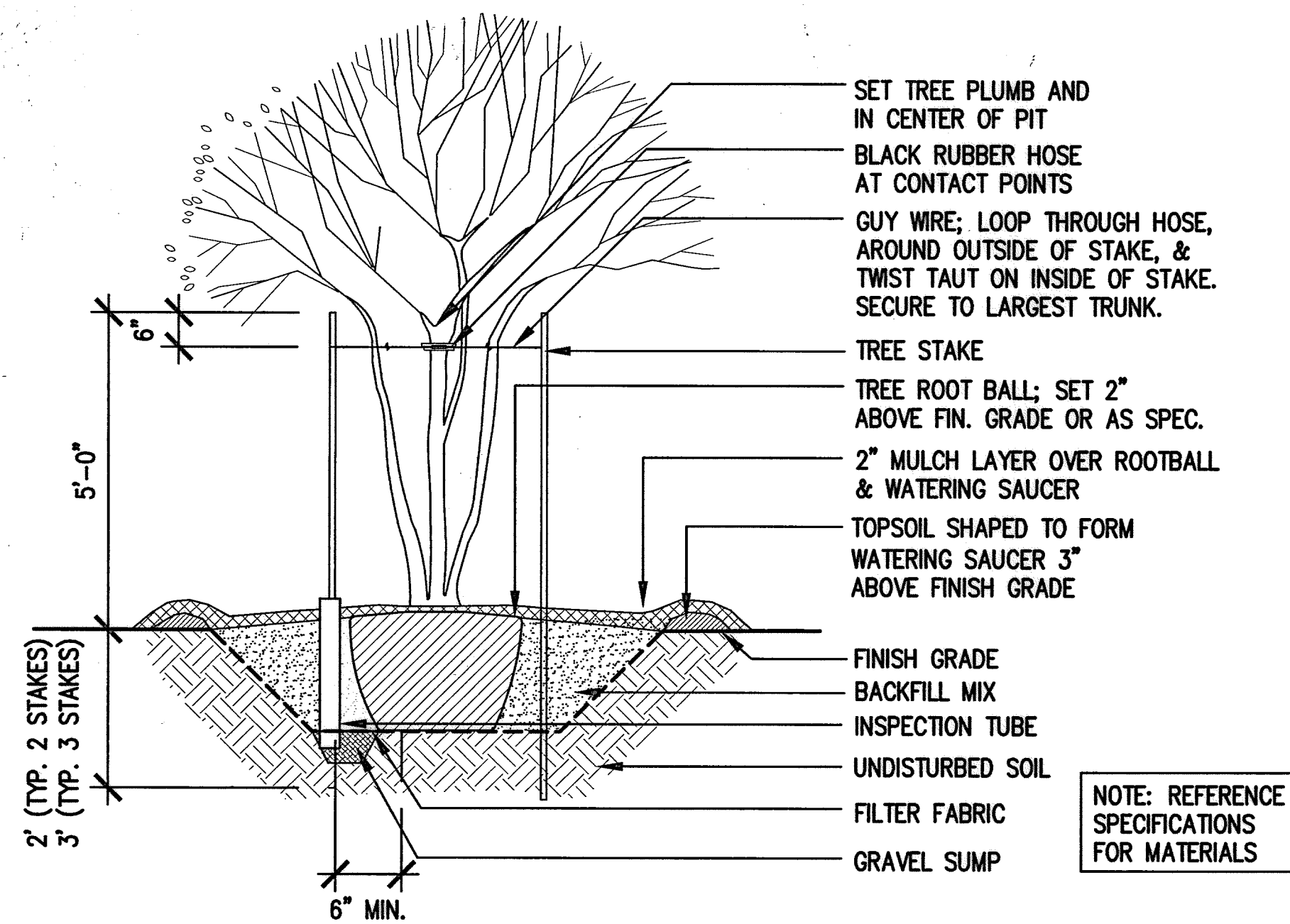
ONLY SIDEWALK CONC. TO RECEIVE 4"  
 SMOOTH TROWEL BOARDER, ALL OTHER CONC.  
 SHALL RECEIVE MED. BROOM FINISH  
 PERPENDICULAR TO DIRECTION OF TRAVEL

REF. 4/L2.02 FOR MATERIAL AND FURNISHING  
 SCHEDULE

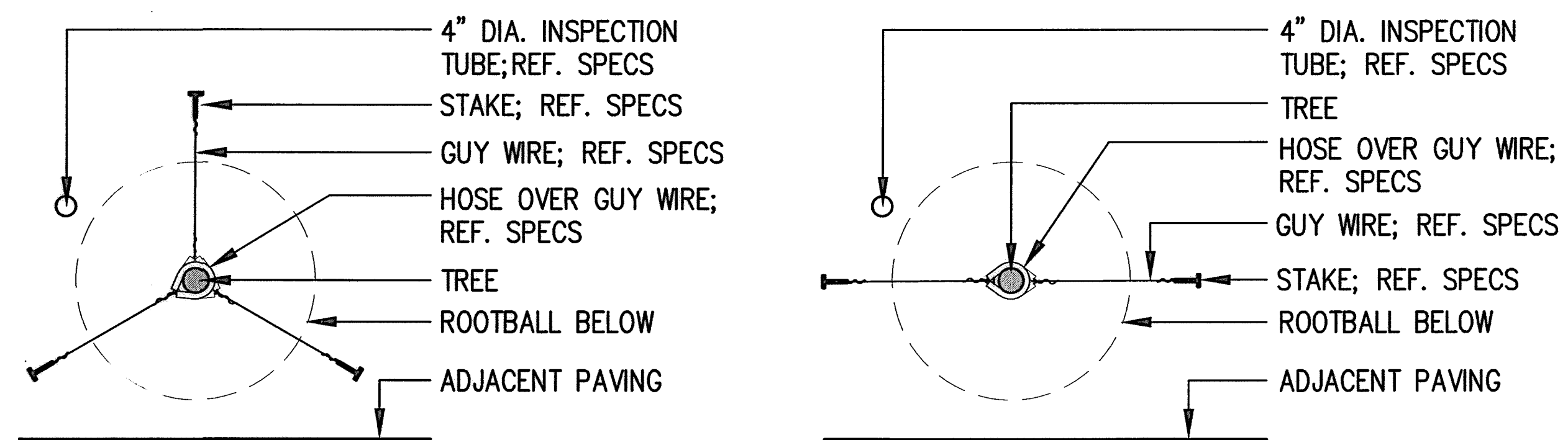
REF. 4/L5.02 FOR PLANTING SCHEDULE

ALIGN PAVING JOINTS TO EDGE OF PAVEMENT,  
 RAISED CONC. BAND, EXIST. JOINTS, AND  
 PAVERS

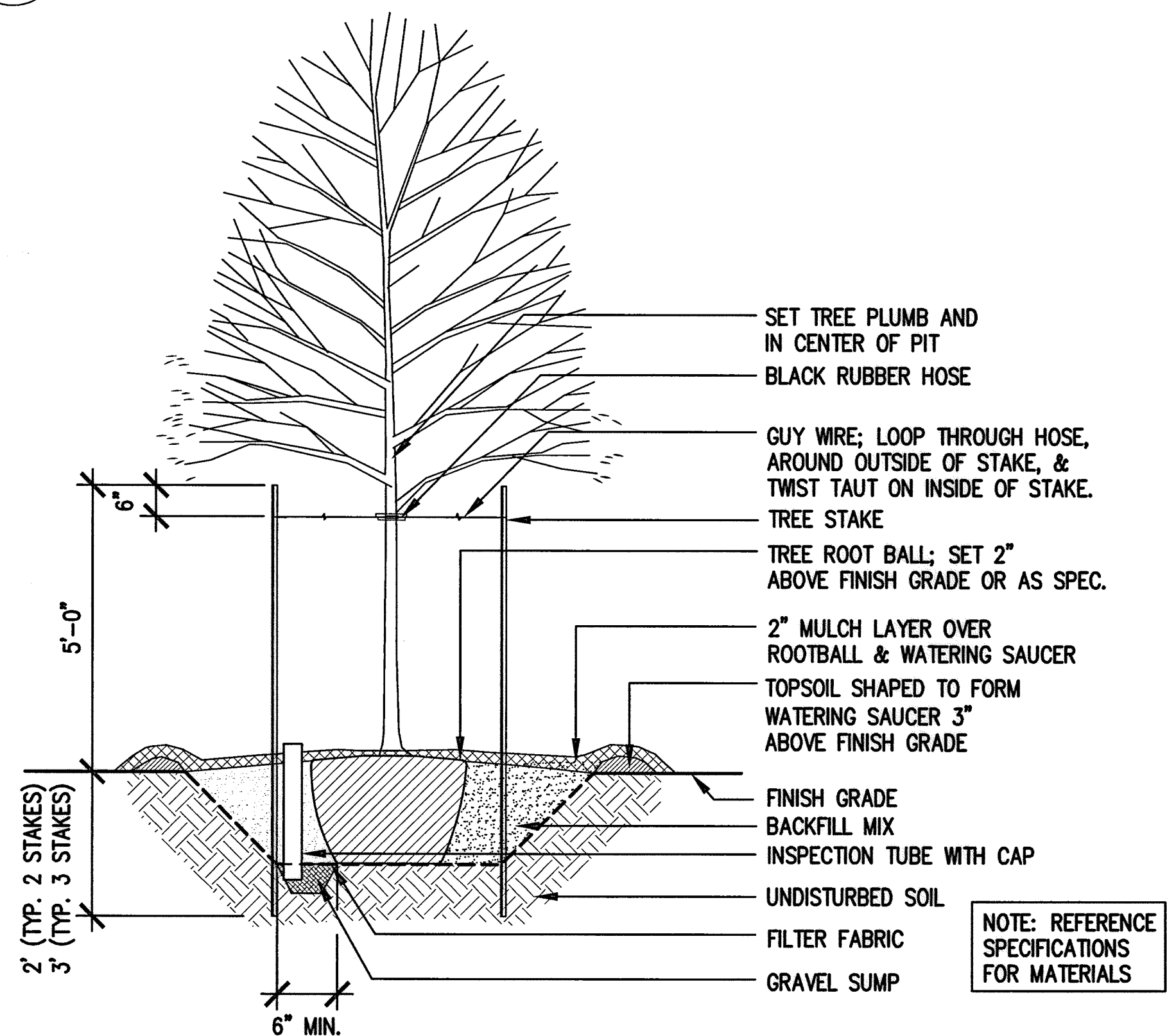
EXIST. POWER POLES TO BE COORDINATED  
 WITH CENTERPOINT ENERGY AND CIVIL



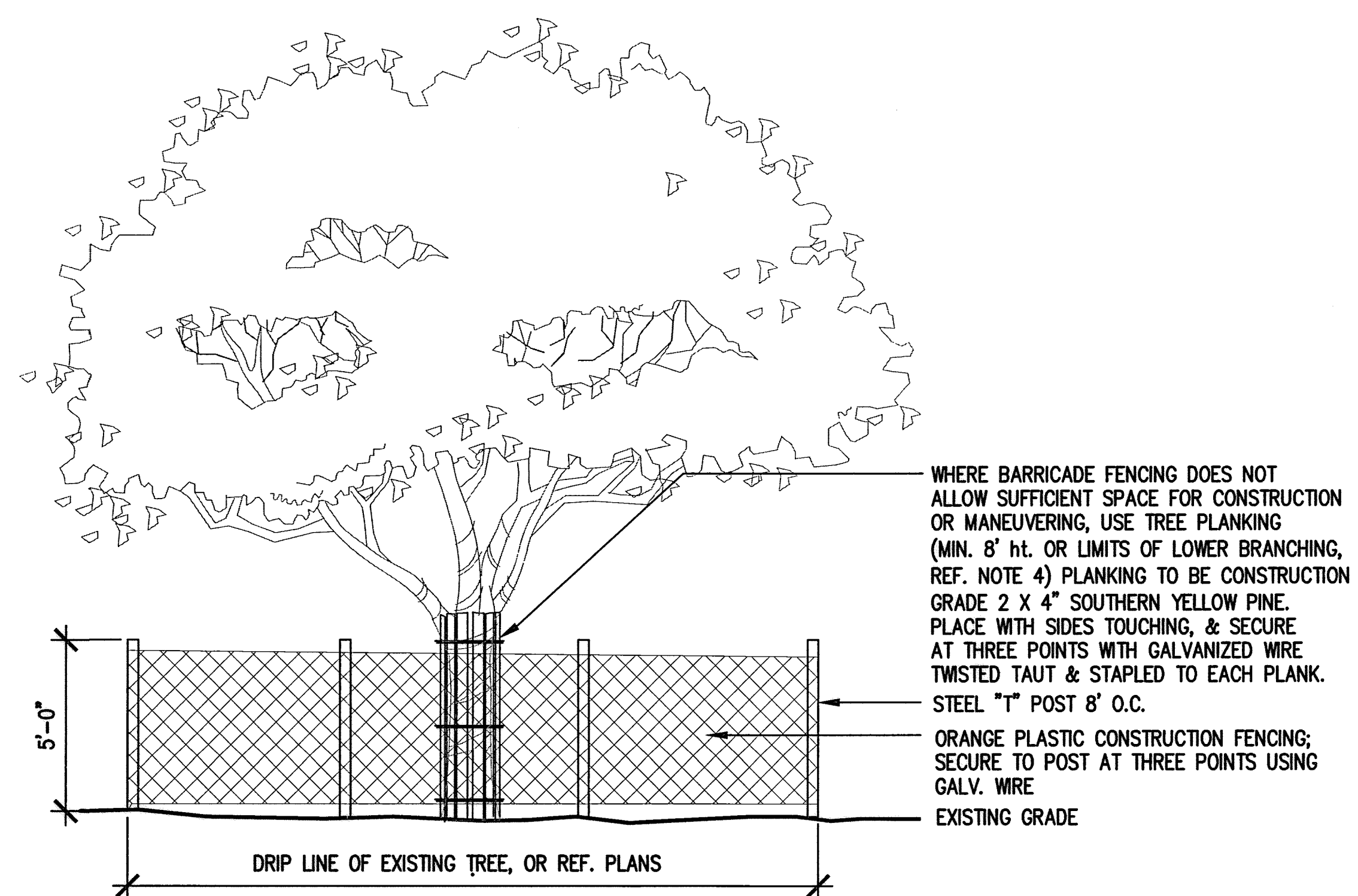
4 STANDARD TREE PLANTING - MULTI-TRUNK  
 NTS



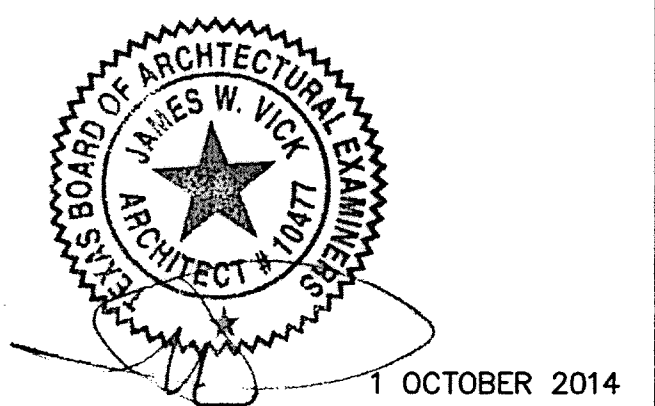
2 STANDARD TREE STAKING  
 NTS



3 STANDARD TREE PLANTING  
 NTS



1 TREE PROTECTION FENCING  
 NTS



SWA Group  
 1245 W 18th Street  
 Houston, TX 77008  
 www.swagroup.com

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 PLANTING DETAILS  
 L5.01

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: HORZ: 1"=20'	
SHEET: 193 OF 226	

APP. REVISIONS No. DATE DATE 04-37 14\_10-01 C6ENTILE \\HOU1FS801\DATA\Project\RHT\RHITS401 Memorial W04 Lumpkin CD\4 Drawings\Graphics\AutoCAD\Sheets\L5\L5.01 PLANTING DETAILS.dwg

APP.	
REVISIONS	
REVISION 1	
No.	DATE
01	1/23/15

**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD., 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV.=82.18 FEET (NAVD 88\GEIOD03)

**NOTES:**  
 REFER TO CIVIL FOR REPAIR OF DISTURBED  
 AREAS.

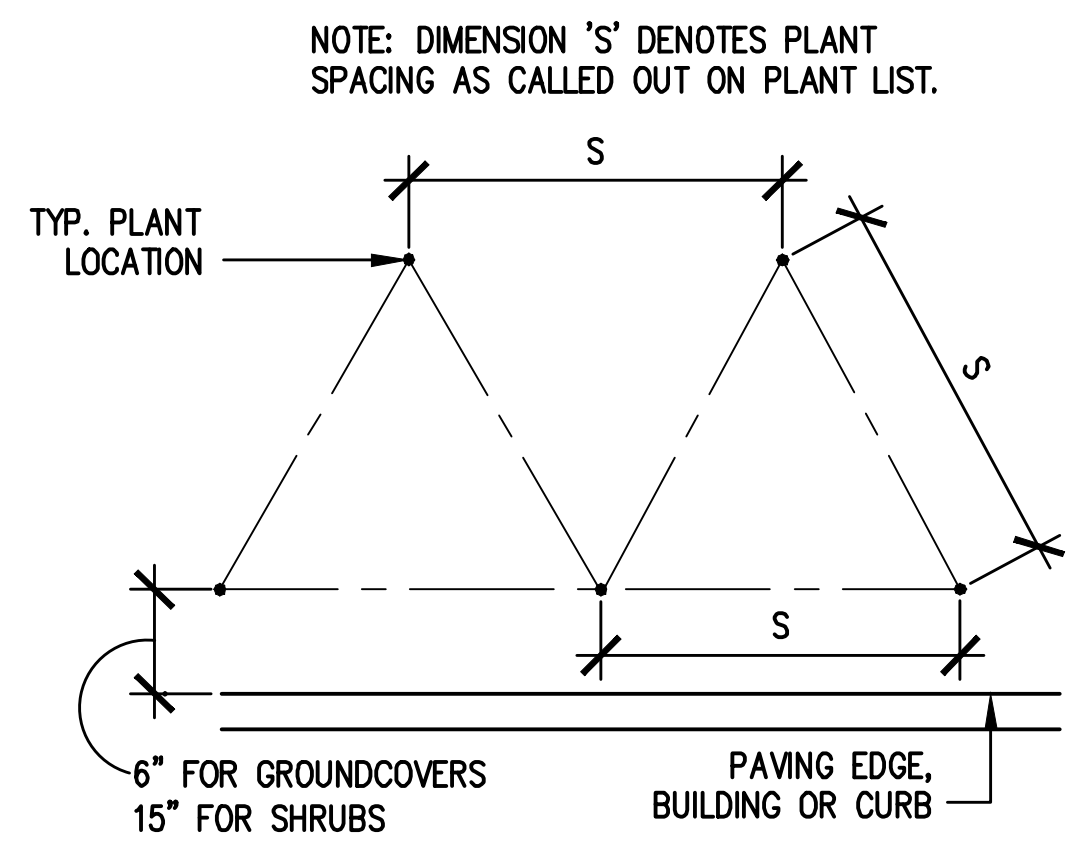
ONLY SIDEWALK CONC. TO RECEIVE 4"  
 SMOOTH TROWEL BOARDER, ALL OTHER CONC.  
 SHALL RECEIVE MED. BROOM FINISH  
 PERPENDICULAR TO DIRECTION OF TRAVEL

REF. 4/L2.02 FOR MATERIAL AND FURNISHING  
 SCHEDULE

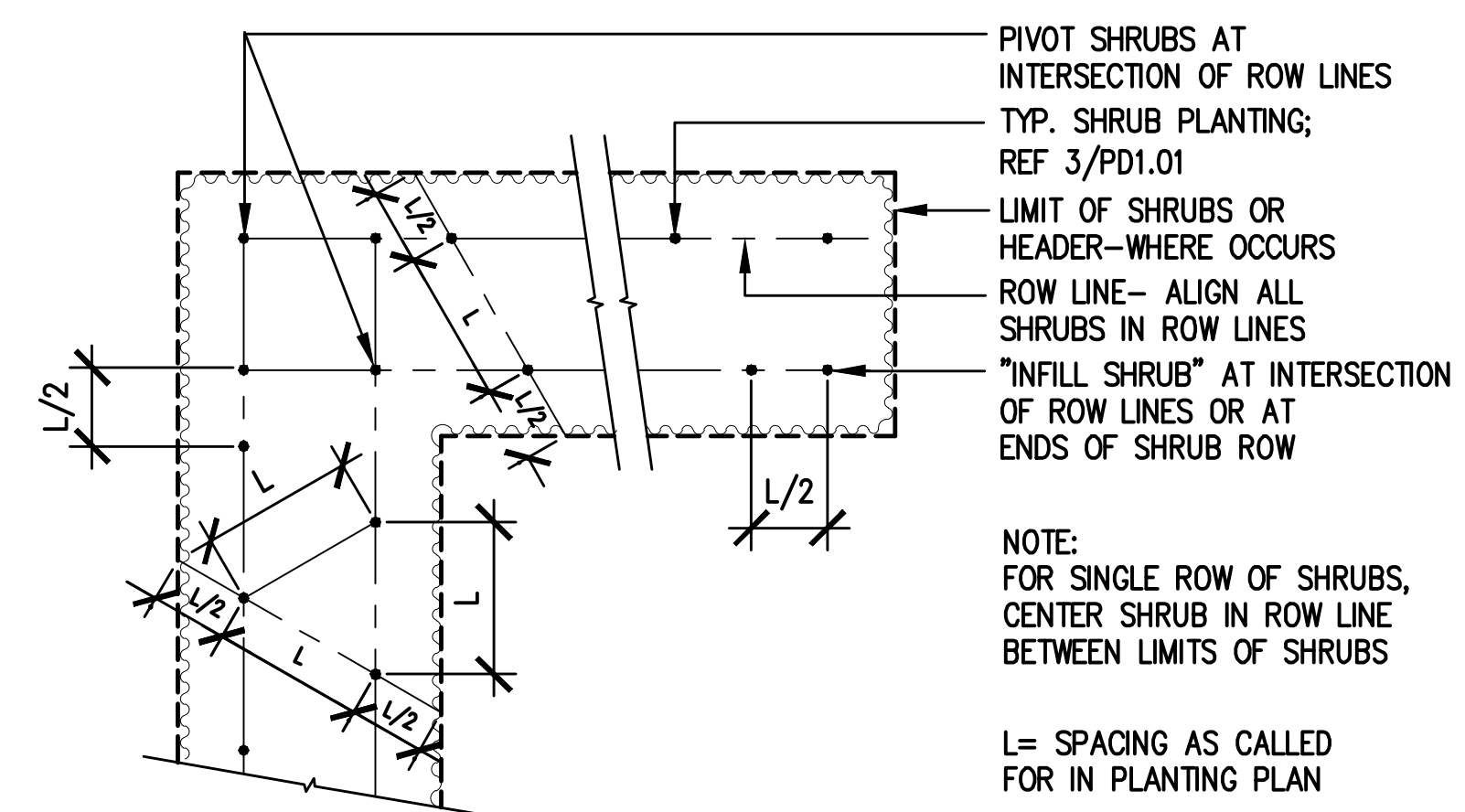
REF. 4/L5.02 FOR PLANTING SCHEDULE

ALIGN PAVING JOINTS TO EDGE OF PAVEMENT,  
 RAISED CONC. BAND, EXIST. JOINTS, AND  
 PAVERS

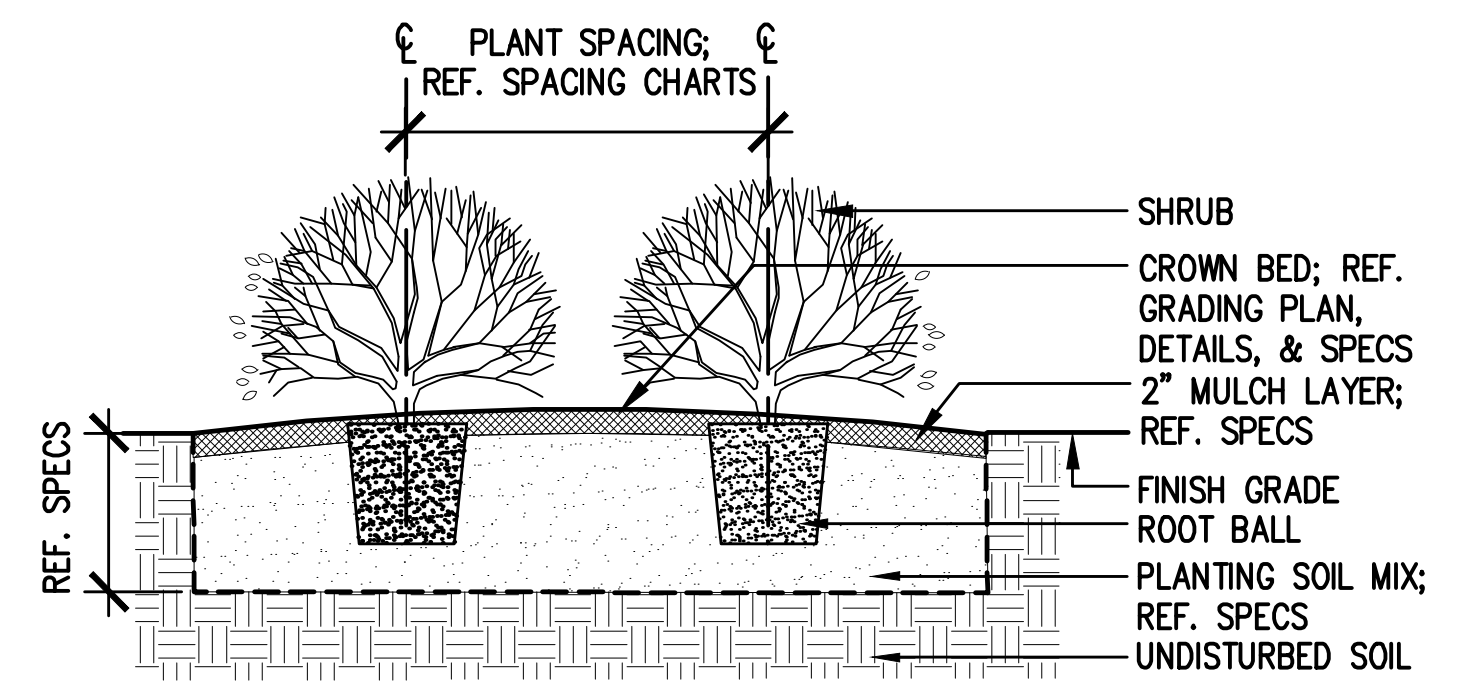
EXIST. POWER POLES TO BE COORDINATED  
 WITH CENTERPOINT ENERGY AND CIVIL



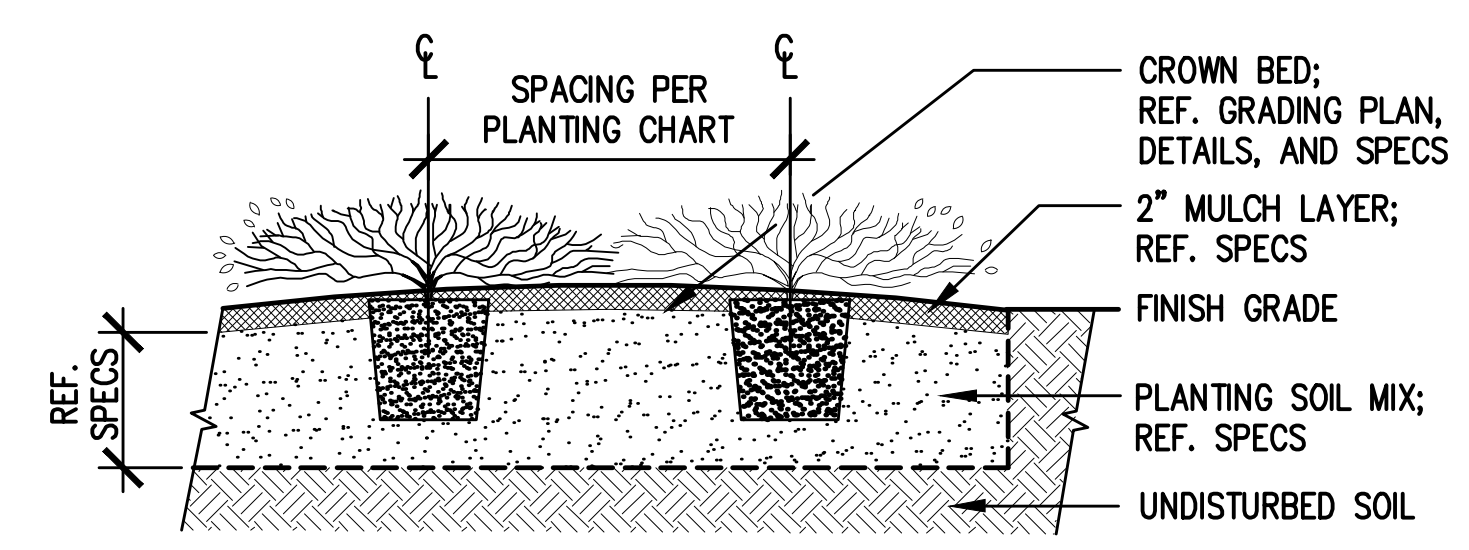
SPACING	PLANTS / SF
6" O.C.	4.61
8" O.C.	2.60
9" O.C.	1.78
10" O.C.	1.66
12" O.C.	1.15
15" O.C.	.738
18" O.C.	.50
24" O.C.	.28
30" O.C.	.18
36" O.C.	.12
48" O.C.	.07
60" O.C.	.04
72" O.C.	.03



3 PLANT SPACING CHART  
 3" = 1'-0"



2 SHRUB PLANTING  
 3/4" = 1'-0"



1 GROUNDCOVER PLANTING  
 3/4" = 1'-0"

PLANTING SCHEDULE

SHADE TREES									
SYM.	Botanical Name	Common Name	Quantity	Units	Size	Cal.	Height	Spread	Remarks
OV	<i>Quercus virginiana</i>	Live Oak	49	EA	65 Gal	3" - 3 1/2"	12' - 14'	6' - 7'	Central Leader
LI	<i>Lagerstroemia indica</i>	Crape Myrtle	56	EA	45 Gal	2" - 2 1/2"	10' - 12'	5' - 6'	Full, well branched

PERENNIAL PLANTINGS									
SYM.	Botanical Name	Common Name	Quantity	Units	Size	Height	Spread	Spacing	Remarks
SG	<i>Salvia greggii 'Alba'</i>	Texas Wedding Sage	-	EA	1 Gal.	2' - 4'	2' - 3'	30" o.c.	Full plants rooted to container
RO	<i>Rosmarinus officinalis</i>	Rosemary	-	EA	1 Gal.	1' - 2'	2' - 4'	30" o.c.	Full plants rooted to container
HM	<i>Hemerocallis minor</i>	Dwarf Day Lily	-	EA	1 Gal.	8" - 1'	1'	30" o.c.	Full plants rooted to container

4 PLANTING SCHEDULE

1 OCTOBER 2014

**SWA Group**  
 1245 W 18th Street  
 Houston, TX 77008  
 www.swagroup.com

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 PLANTING DETAILS  
 L5.02

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD
FILE NO.:	FACILITY	
DRAWING SCALE:	QTY DWG NO.	
VERT: HORIZ: 1"=20'		
SHEET: 163 OF 226		

CGENTILE 03.14 14\_10-01 \\HOU1FS801\DATA\Project\RH11\RH11S401 Memorial W04 Lumkin CD\4 Drawings\Graphics\AutoCAD\Sheets\L5\L5.02 PLANTING DETAILS.dwg

**LEGEND:**

● A (A-1,3)

TYPE "A" PEDESTRIAN LIGHT STANDARD  
(CIRCUIT NUMBER)

□

SERVICE METER AND CONTROLS FOR LIGHTING; SEE  
DETAIL AND KEYED NOTES

---

SCHEDULE 80 PVC WHERE UNDERGROUND

---

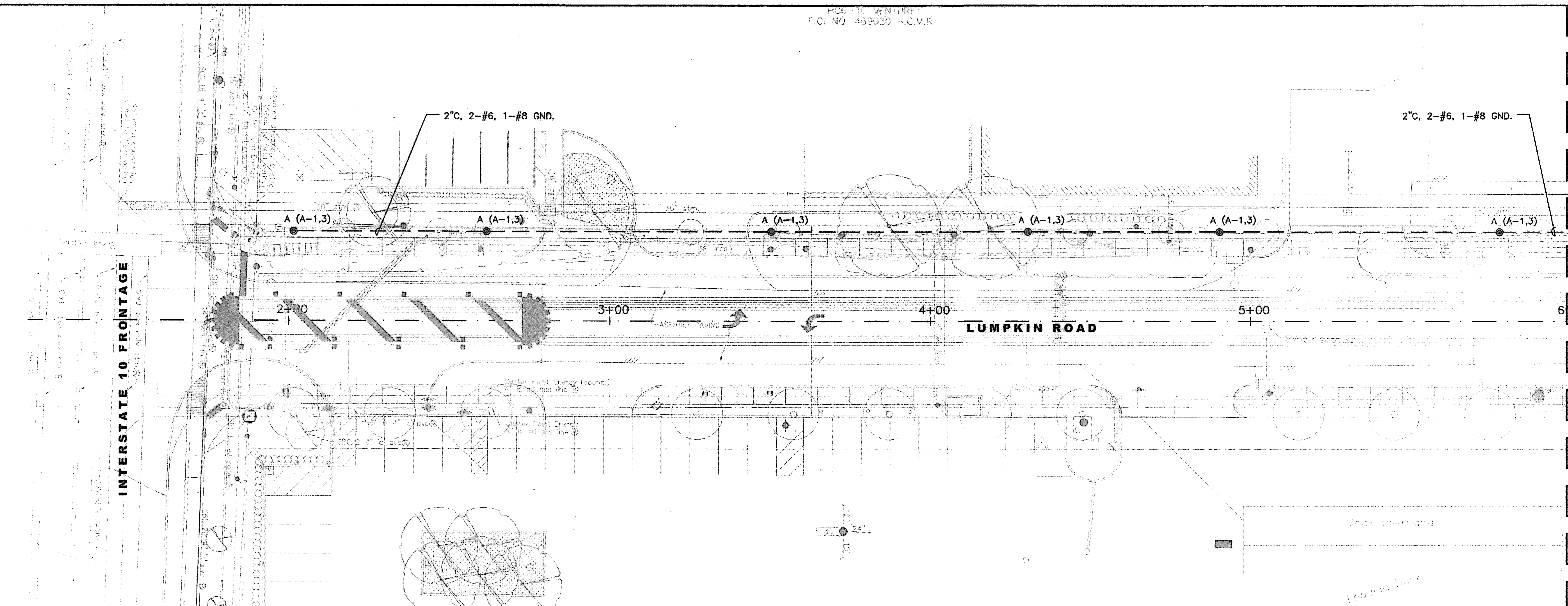
SCHEDULE 80 PVC, BORE

---

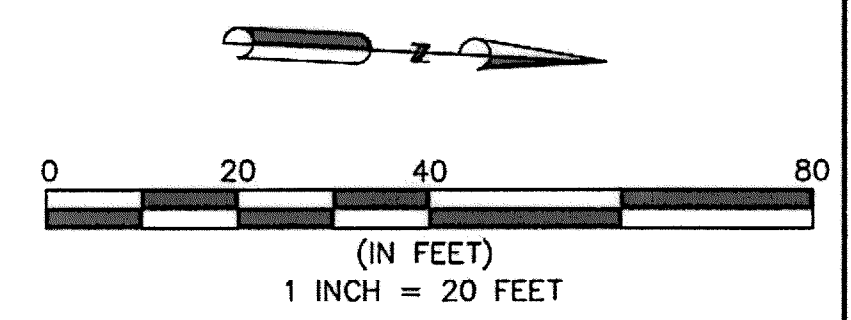
SCHEDULE 80 PVC, IN EXISTING SLEEVE

⊕

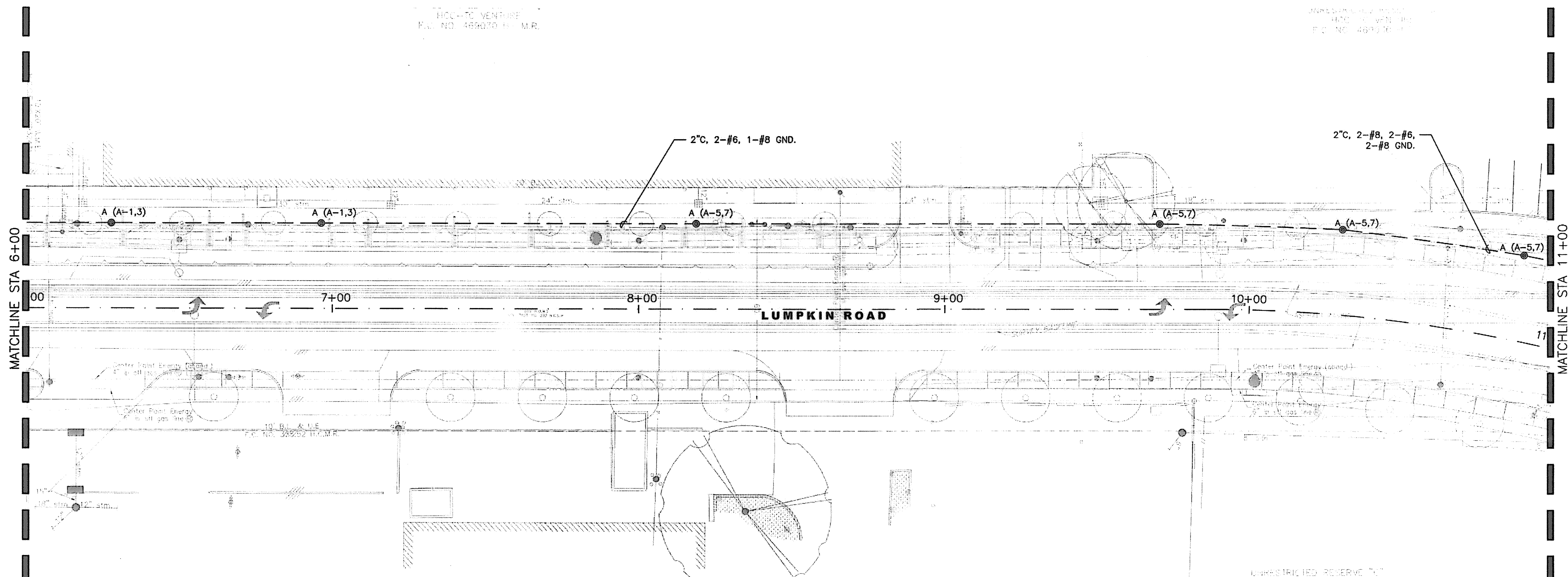
JUNCTION BOX



MATCHLINE STA 6+00



**1 ELECTRICAL LIGHTING PLAN**  
SCALE: 1" = 20'-0"



**2 ELECTRICAL LIGHTING PLAN**  
SCALE: 1" = 20'-0"

1 OCTOBER 2014  
 TBPE FIRM NO. F-3446

**HUNT & HUNT ENGINEERING CORP.**  
HOUSTON, TEXAS 77215  
TBPE FIRM NO. F-3446

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

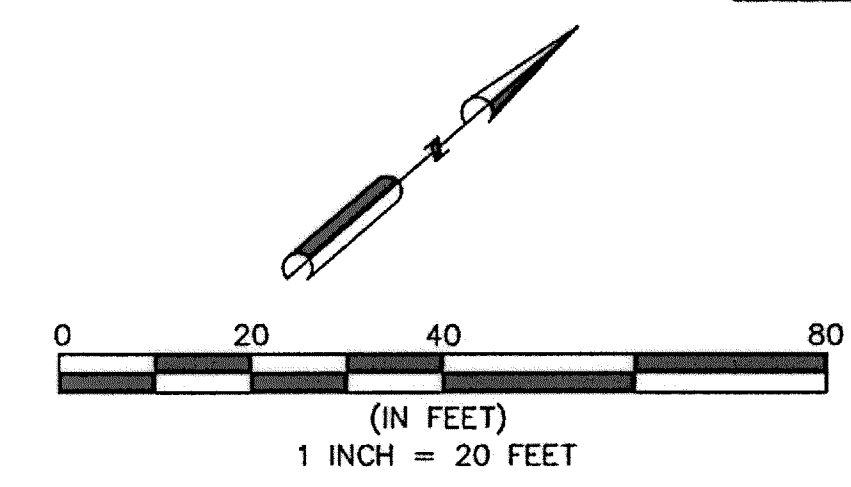
LUMPKIN ROAD  
N-T17000-0012-3  
ELECTRICAL LIGHTING PLAN  
1+00 TO 11+00  
LE1.01

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: HORZ: 1"=20'		
SHEET: 195 OF 226		

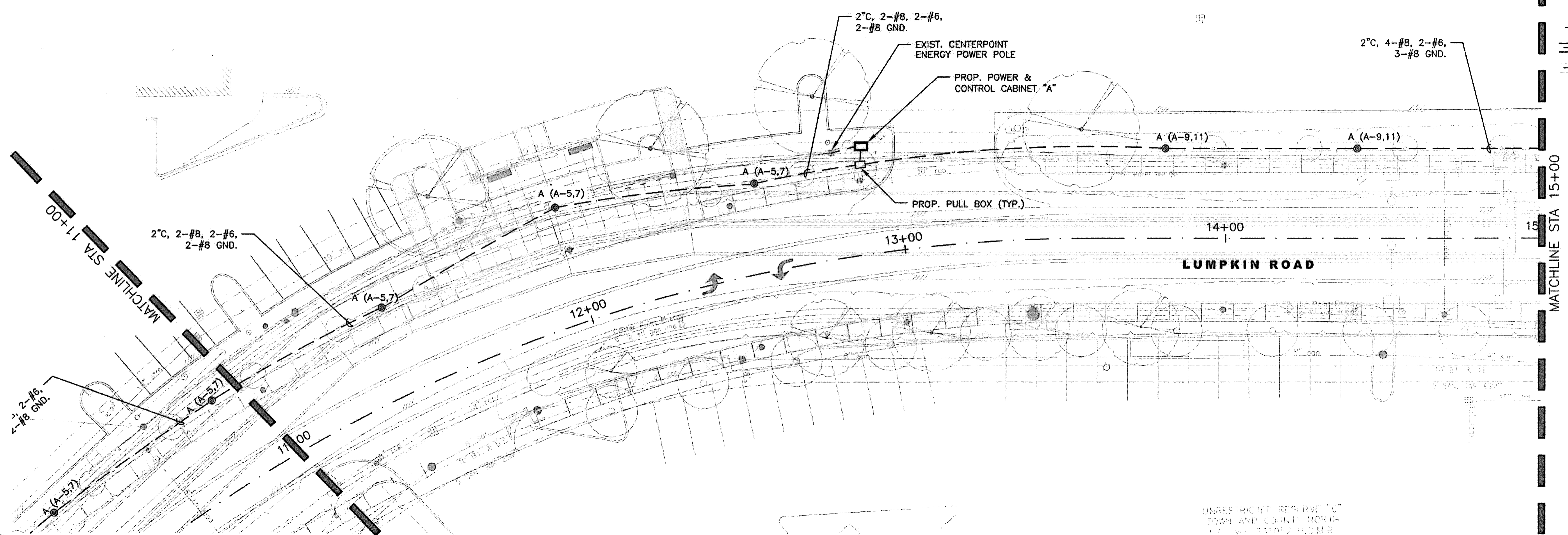
APP. REVISIONS DATE No. 14\_10-01 3:23:12 PM C:\DWG\SWA Group\Lumpkin Road\LE1.01-LE1.03.dwg

**LEGEND:**

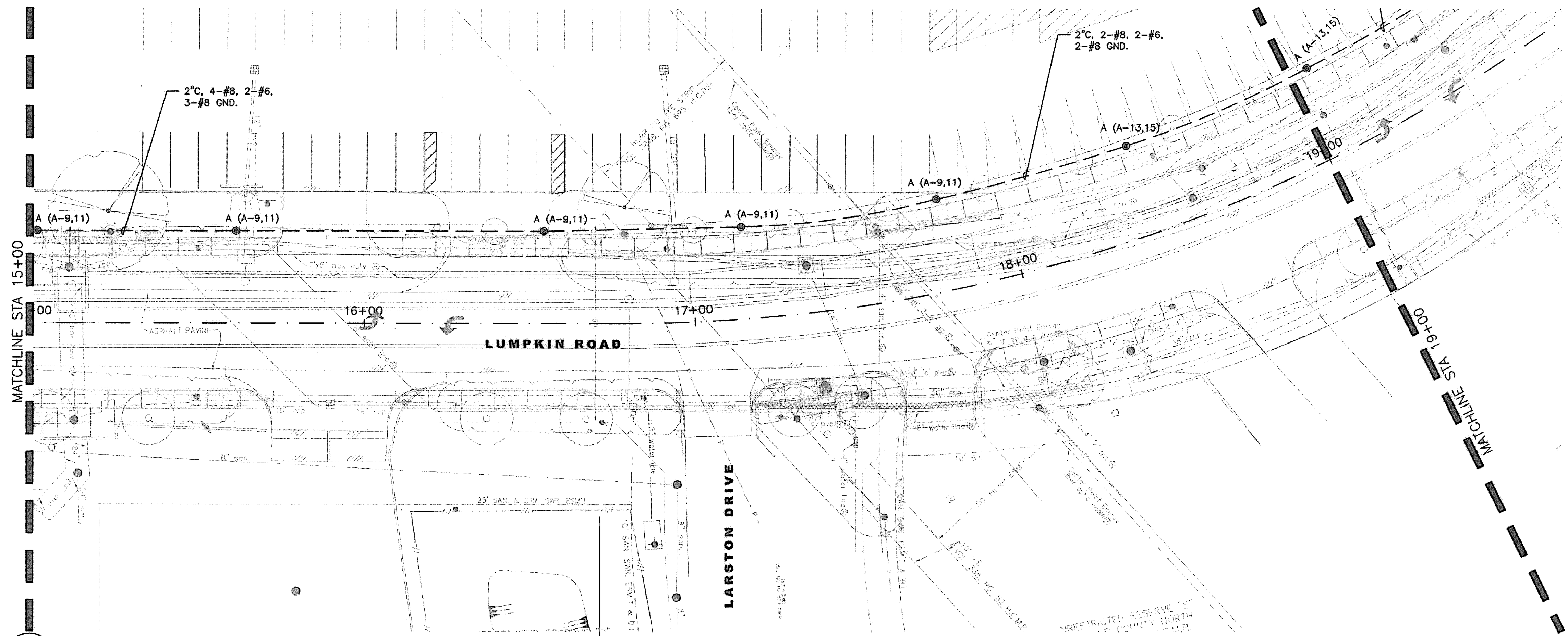
	TYPE "A" PEDESTRIAN LIGHT STANDARD (CIRCUIT NUMBER)
	SERVICE METER AND CONTROLS FOR LIGHTING; SEE DETAIL AND KEYED NOTES
	SCHEDULE 80 PVC WHERE UNDERGROUND
	SCHEDULE 80 PVC, BORE
	SCHEDULE 80 PVC, IN EXISTING SLEEVE
	JUNCTION BOX



APP.	REVISIONS	DATE



1 ELECTRICAL LIGHTING PLAN  
SCALE: 1" = 20'-0"



2 ELECTRICAL LIGHTING PLAN  
SCALE: 1" = 20'-0"

1 OCTOBER 2014  
TBPE FIRM NO. F-3446

**HUNT & HUNT ENGINEERING CORP.**  
HOUSTON, TEXAS 77215  
TBPE FIRM NO. F-3446

**LAN Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
ELECTRICAL LIGHTING PLAN  
11+00 TO 19+00

LE1.02

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO.:	FACTORY
DRAWING SCALE:	QTY DWG NO.
VERT: HORZ: 1"=20'	SHEET: 196 OF 226

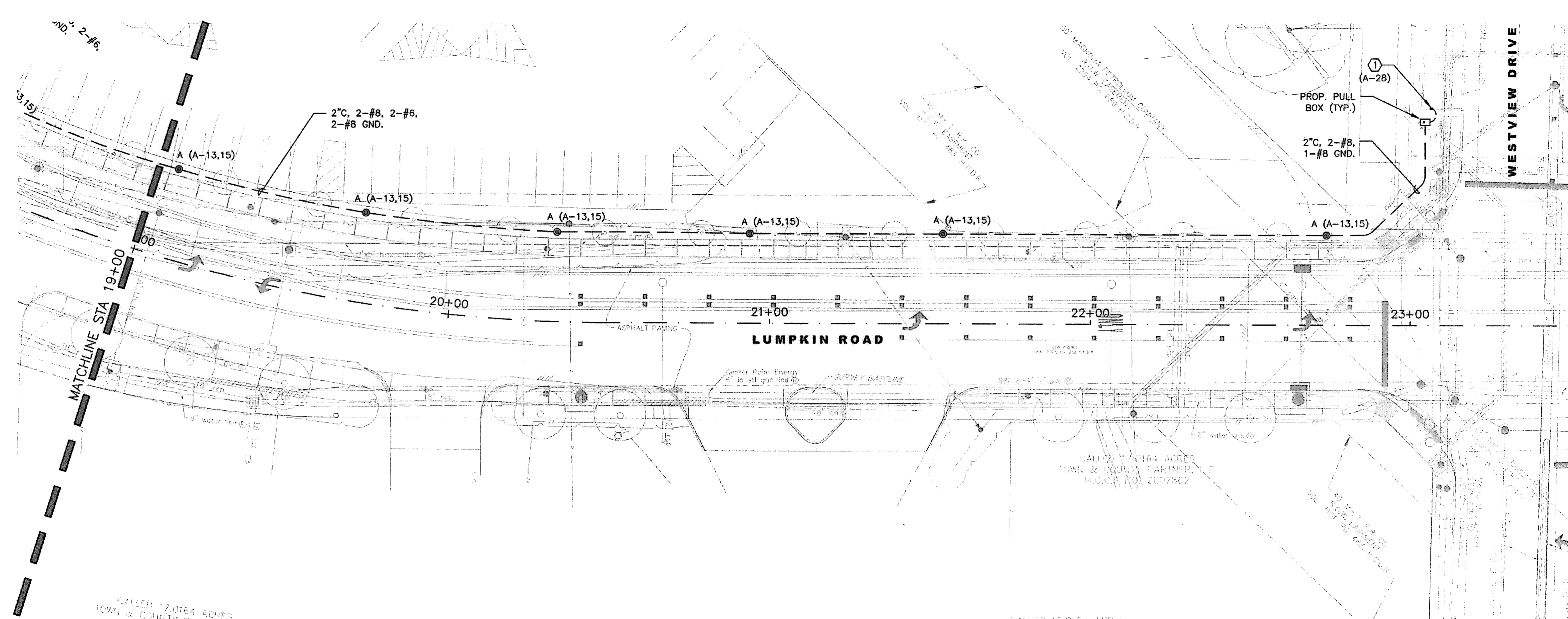
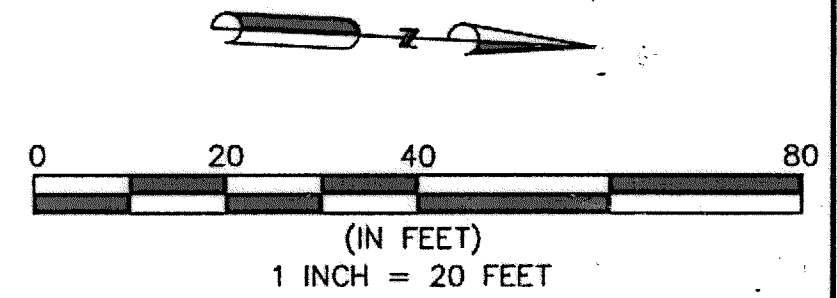
C:\DWG\SWA Group\Lumpkin Road\LE1.01-LE1.03.dwg 3:23:52 PM 14\_10-01

**KEYED NOTES:**

- ① VERIFY EXACT LOCATION OF BUS SHELTER SWITCH BOX IN FIELD AND MAKE FINAL TERMINATION.

**LEGEND:**

- A (A-1,3) TYPE "A" PEDESTRIAN LIGHT STANDARD (CIRCUIT NUMBER)
- SERVICE METER AND CONTROLS FOR LIGHTING; SEE DETAIL AND KEYED NOTES
- SCHEDULE 80 PVC WHERE UNDERGROUND
- === SCHEDULE 80 PVC, BORE
- SCHEDULE 80 PVC, IN EXISTING SLEEVE
- Ⓧ JUNCTION BOX



**1 ELECTRICAL LIGHTING PLAN**  
SCALE: 1" = 20'-0"

1 OCTOBER 2014  
TBPE FIRM NO. F-3446

**HUNT & HUNT ENGINEERING CORP.**  
HOUSTON, TEXAS 77215  
TBPE FIRM NO. F-3446

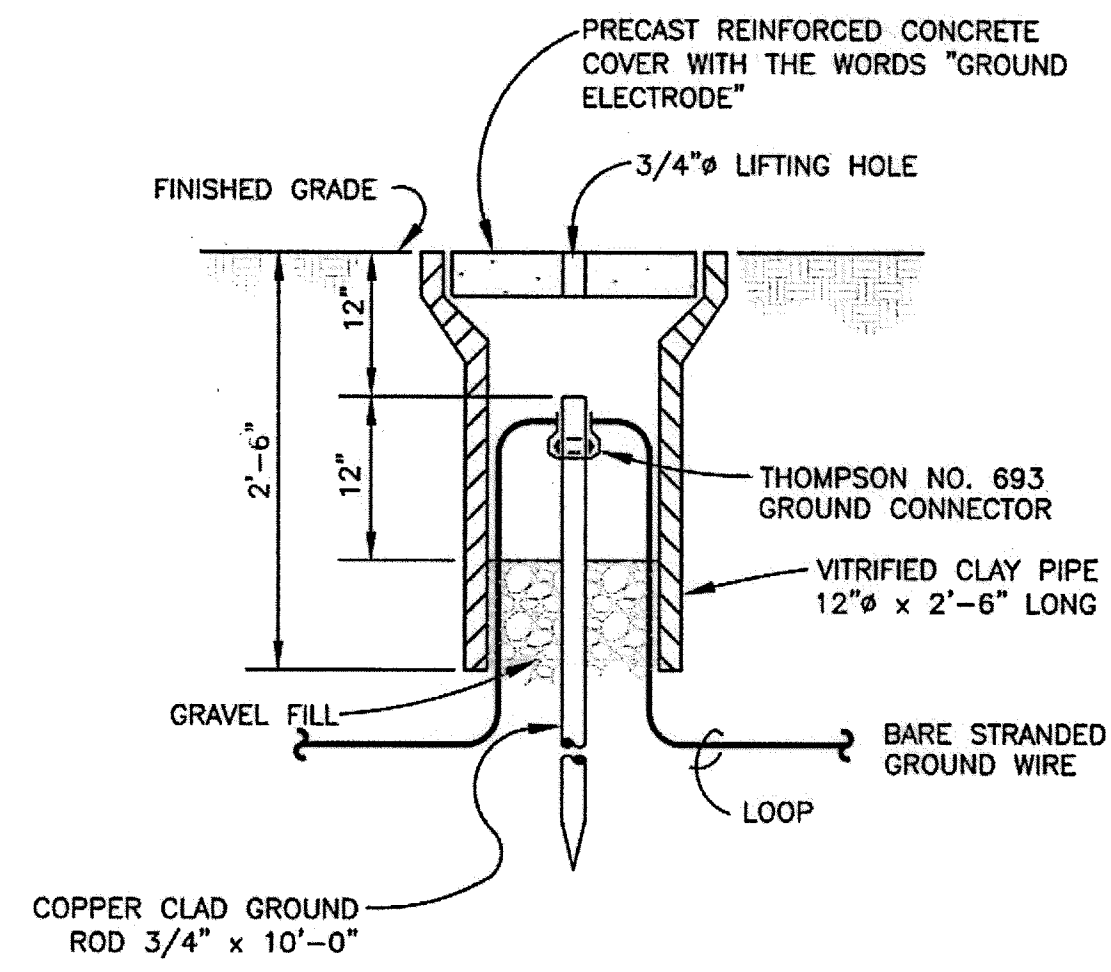
**LAN Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
ELECTRICAL LIGHTING PLAN  
19+00 TO 23+00

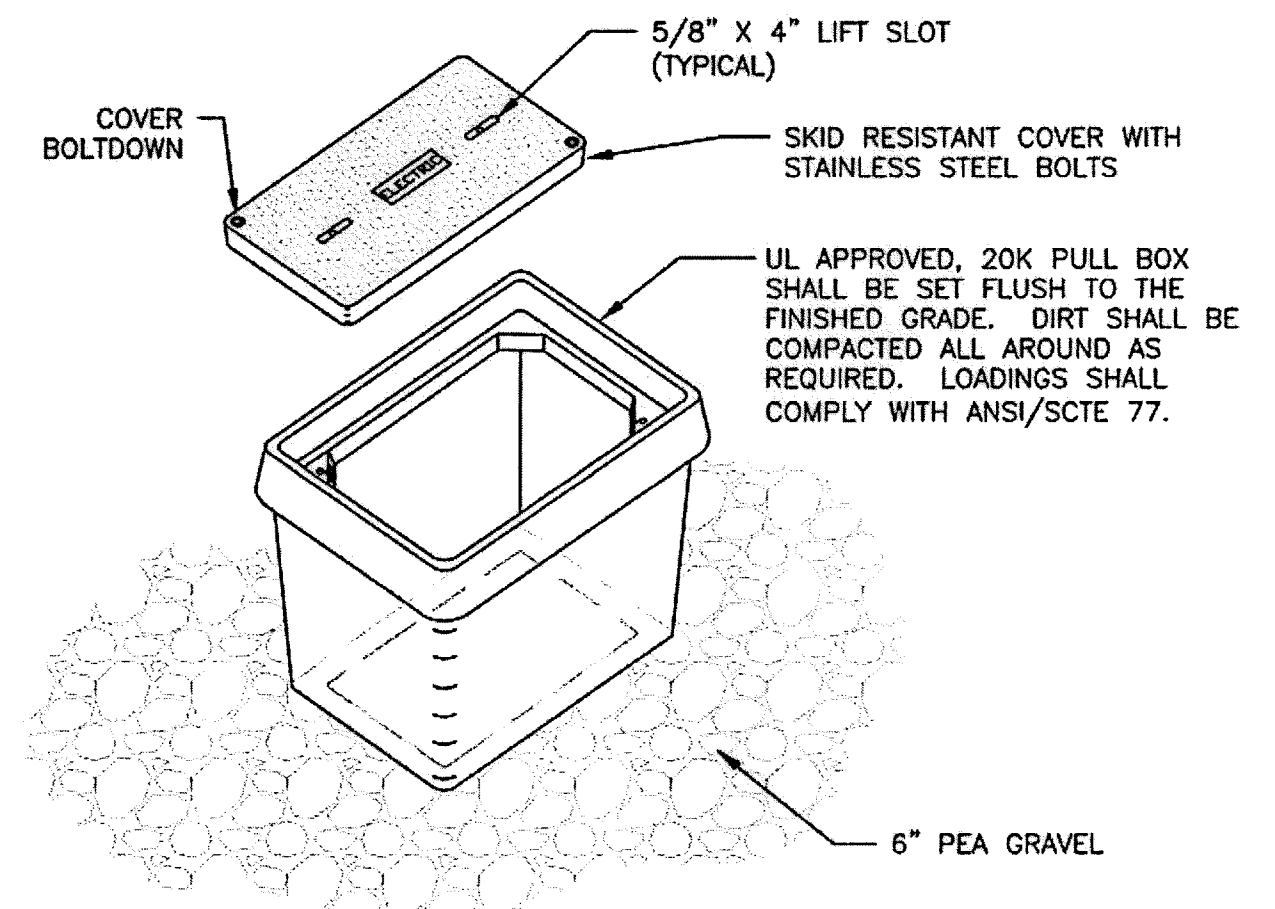
LE1.03

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT: HORZ: 1"=20'		
SHEET: 197 OF 226		

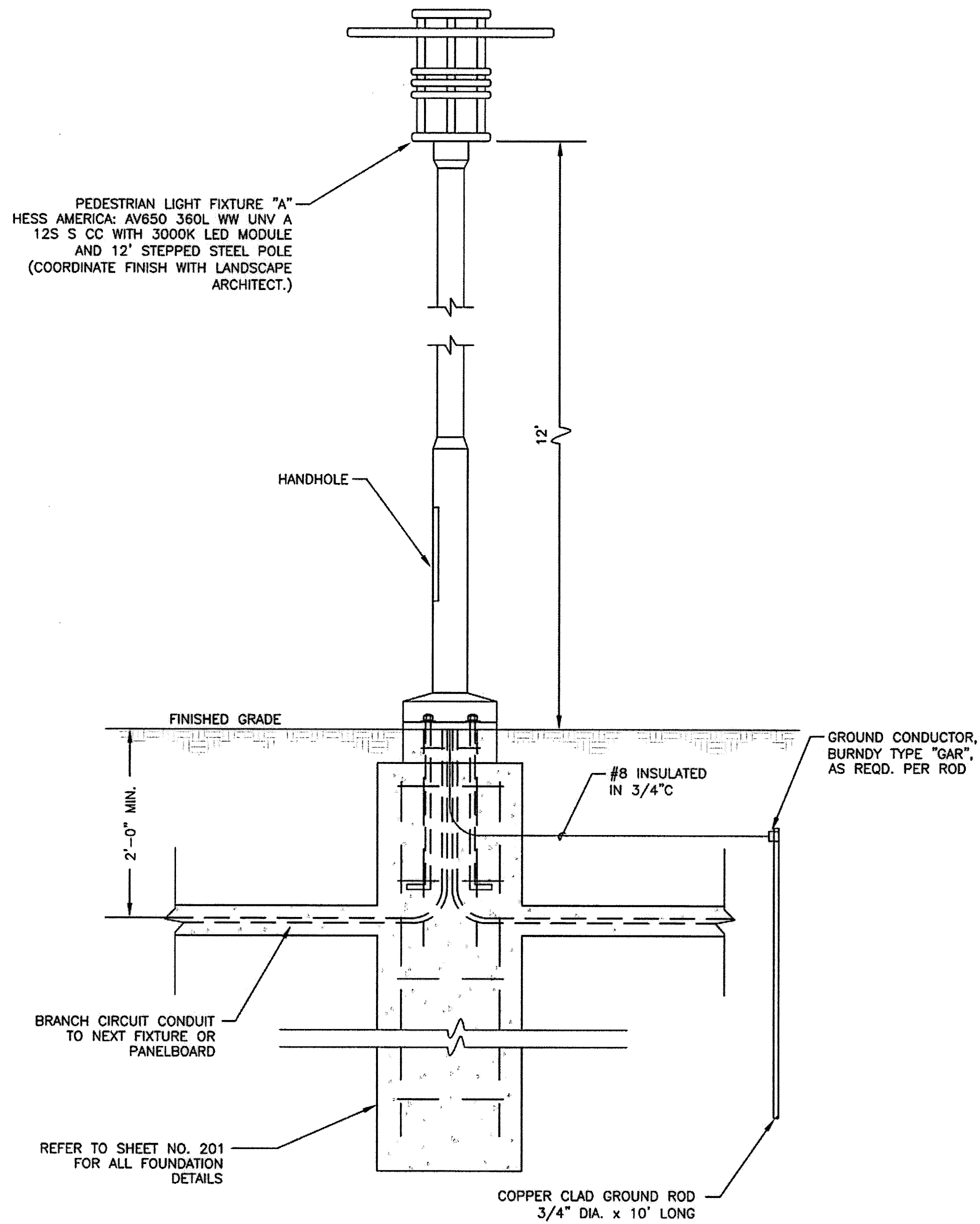
APP. REVISIONS DATE No. 14\_10-01 3:24:13 PM C:\DWG\SWA Group\Lumpkin Road\LE1.01-LE1.03.dwg



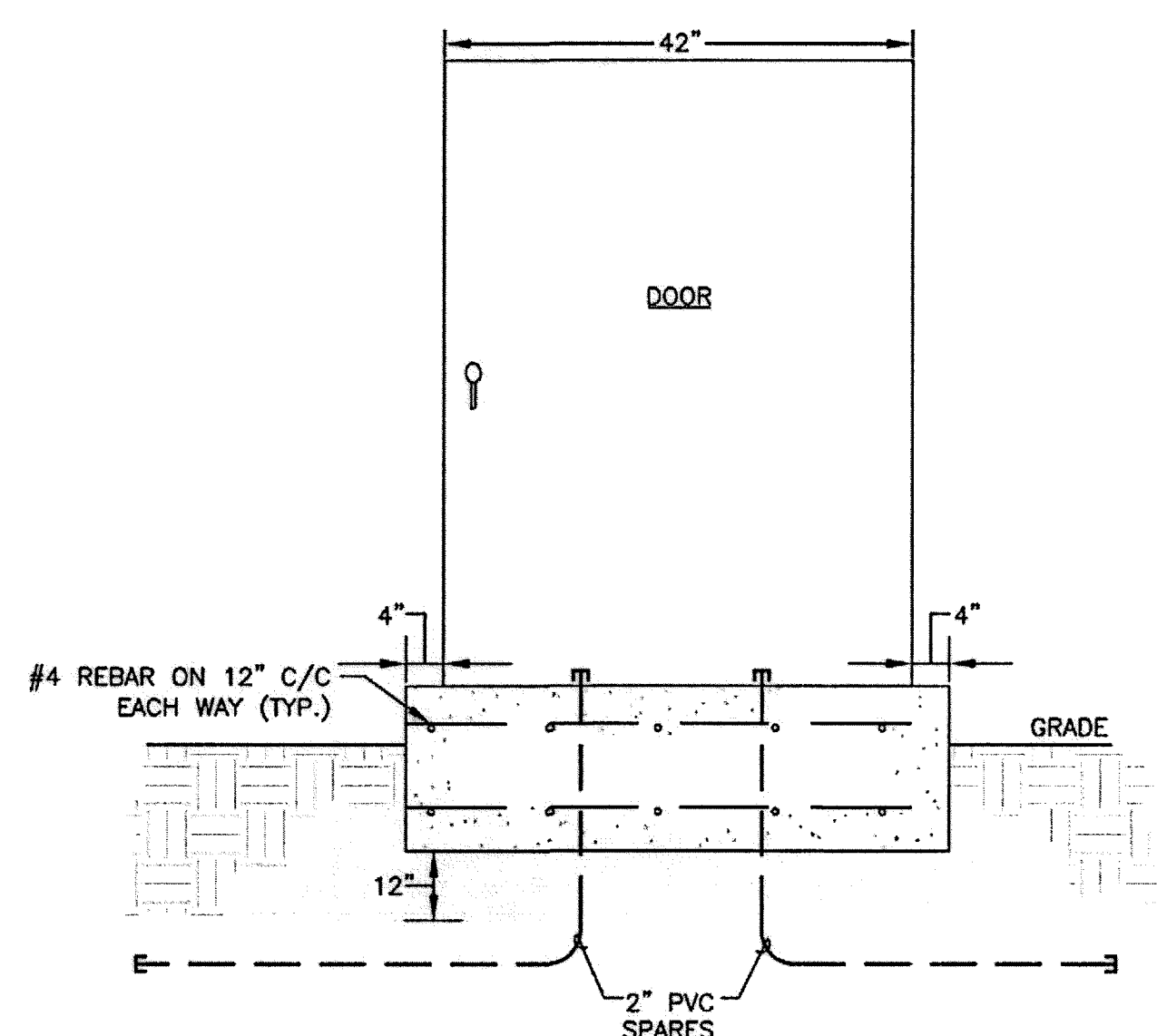
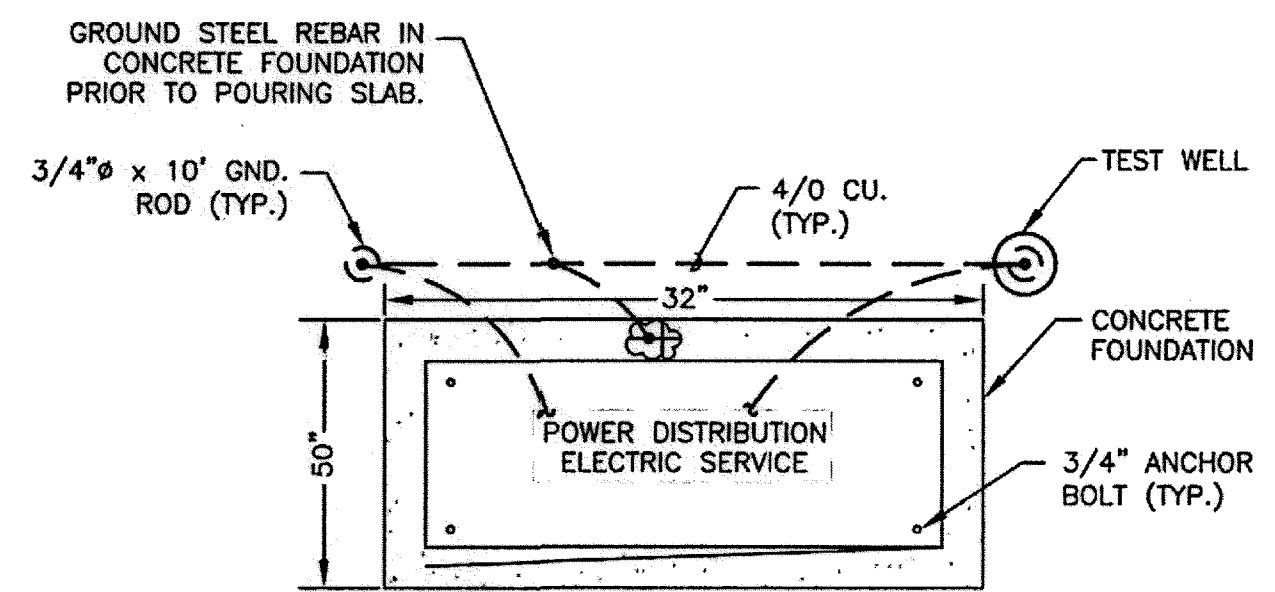
**1 GROUND ROD & TEST WELL DETAIL**  
SCALE: N.T.S.



**2 TYPICAL CONCRETE POLYMER PULL BOX DETAIL**  
SCALE: N.T.S.



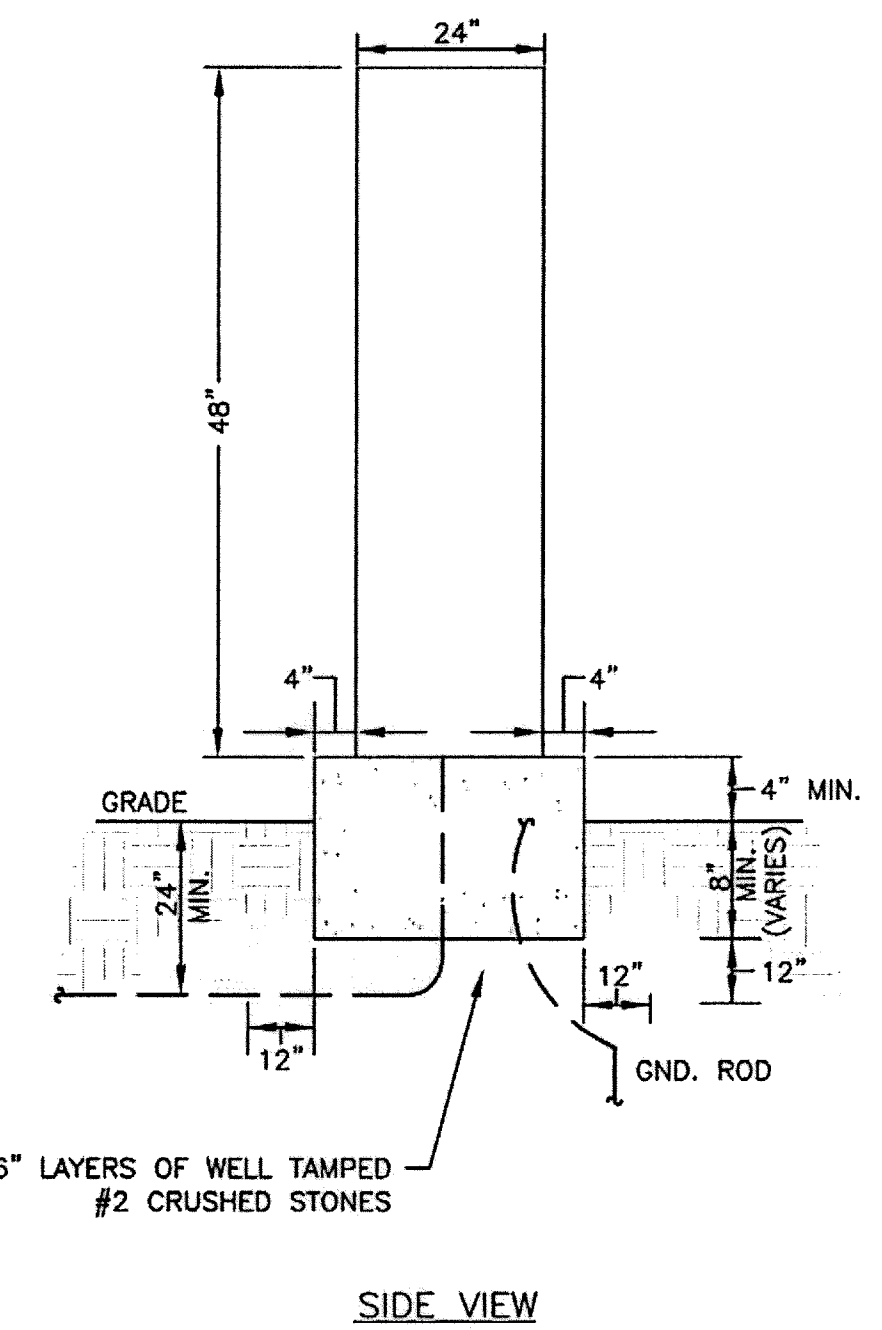
**3 TYPICAL POLE MOUNTING DETAIL**  
SCALE: N.T.S.



**4 ELECTRICAL CABINET FOUNDATION DETAIL**  
SCALE: N.T.S.

**CABINET NOTES:**

1. MATERIAL: CABINET SHALL BE 12 GAUGE MINIMUM, TYPE 304 STAINLESS STEEL, NEMA 4X CONSTRUCTION, WITH FULL-LENGTH STAINLESS STEEL PIANO HINGE DOORS. EQUIP EXTERIOR DOOR WITH PADLOCK, HEAVY-DUTY LOCKING PISTOLGRIP HANDLES AND 3-POINT LATCHING MECHANISM OF THE DRAW ROLLER TYPE (0.750 INCH MINIMUM DIA. ROLLERS). HANDLES SHALL BE STAINLESS STEEL. EQUIP DOORS WITH NEOPRENE GASKETS.
2. INSIDE AND OUTSIDE OF CABINET SHALL BE GROUND SMOOTH AND FREE FROM DEFECTS.
3. OVERALL DIMENSIONS SHALL BE MINIMUM AS INDICATED. CONTRACTOR SHALL PROVIDE SUBMITTAL DRAWINGS WITH ACTUAL EQUIPMENT LAYOUT AND FINAL DIMENSIONS.
4. ALL EXPOSED BOXES SHALL BE PROVIDED WITH TAMPER PROOF SCREWS AND BOLTS.
5. TEST CABINETS IN ACCORDANCE WITH UL 50, 50 UNIT QUALIFIES FOR A UL LABEL.



1 OCTOBER 2014  
TBPE FIRM NO. F-3446

**HUNT & HUNT ENGINEERING CORP.**  
HOUSTON, TEXAS 77215  
TBPE FIRM NO. F-3446

**LAN Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3

ELECTRICAL DETAILS

LE2.01

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

FILE NO.: \_\_\_\_\_ FACILITY \_\_\_\_\_

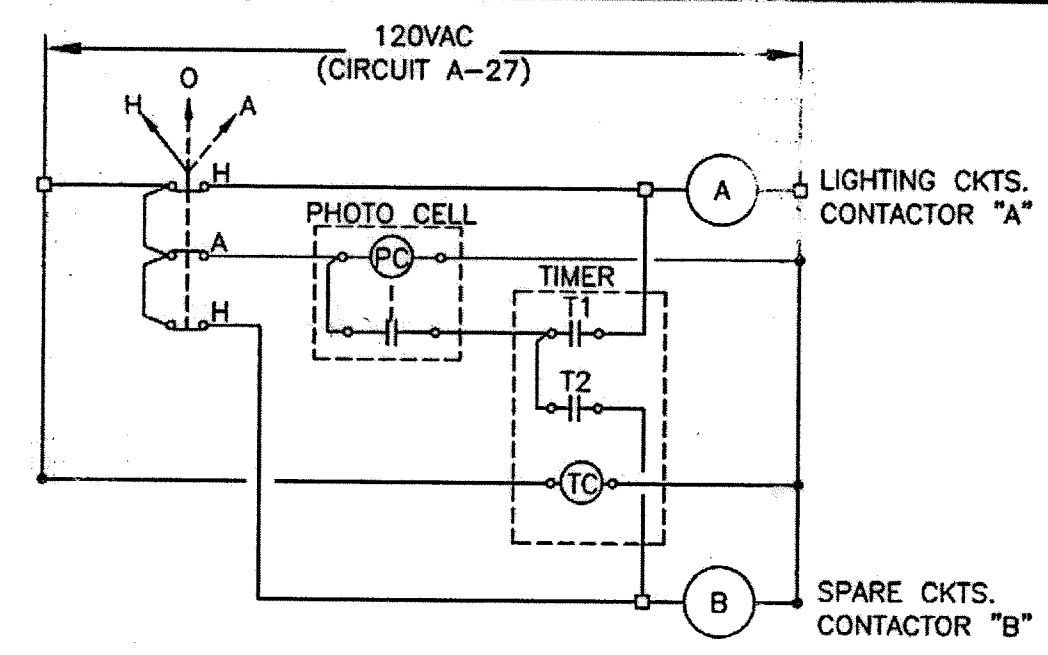
DRAWING SCALE: \_\_\_\_\_ CITY DWG NO. \_\_\_\_\_

VERT: \_\_\_\_\_

HORIZ: \_\_\_\_\_

SHEET: 198 OF 226

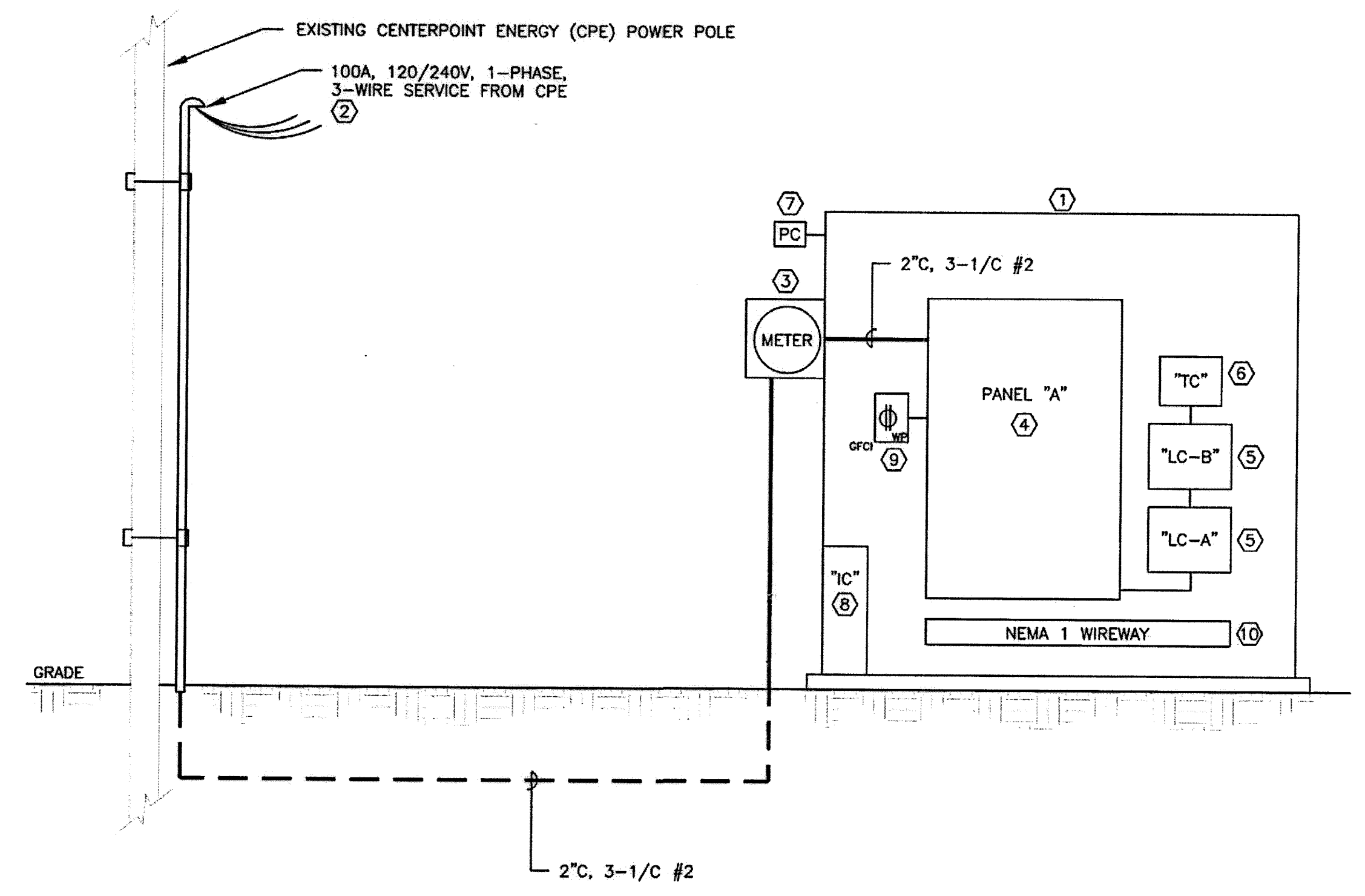
APP. REVISIONS No. DATE 4:48:36 PM 14\_10-01 c:\dwg\swa Group\Lumpkin Road\LE2.01.dwg



A-C1	PED. LIGHTS	B-C1	SPARE
A-C2	PED. LIGHTS	B-C2	SPARE
A-C3	PED. LIGHTS	B-C3	SPARE
A-C4	PED. LIGHTS	B-C4	SPARE
A-C5	PED. LIGHTS	B-C5	SPARE
A-C6	PED. LIGHTS	B-C6	SPARE
A-C7	PED. LIGHTS	B-C7	SPARE
A-C8	PED. LIGHTS	B-C8	SPARE
A-C9	SPARE	B-C9	SPARE
A-C10	SPARE	B-C10	SPARE
A-C11	SPARE	B-C11	SPARE
A-C12	SPARE	B-C12	SPARE

LIGHTING CKTS.                      SPARE CKTS.

**1 LIGHTING CONTACTOR DETAIL**  
SCALE: N.T.S.



**2 ELECTRICAL ONE-LINE DIAGRAM**  
SCALE: N.T.S.

- KEYED NOTES:**
- ① PROVIDE ELECTRIC SERVICE ENCLOSURE WITH FOUNDATION, ELECTRICAL EQUIPMENT AND GROUNDING FOR ALL COMPONENTS IN ACCORDANCE WITH NEC.
  - ② PROVIDE WEATHERHEAD, 2" RCS RISER AND STANDOFF BRACKETS. INSTALL CONDUIT AND WIRING IN ACCORDANCE WITH CENTERPOINT ENERGY (CPE) STANDARDS AND COORDINATE ALL WORK WITH CPE.
  - ③ PROVIDE A 320A COMMERCIAL METER CAN, 240V, 1-PHASE, 3-WIRE AND 300A.
  - ④ PROVIDE A 100A, 1-PHASE, 3-WIRE, 120/240V, NEMA 1, COPPER MAIN BUS, RATED SERVICE ENTRANCE PANELBOARD. GENERAL ELECTRIC TYPE AQ OR EQUAL.
  - ⑤ PROVIDE A 12-POLE, 30A, 600VAC LIGHTING CONTACTOR WITH 120V CONTROL AND HOA SWITCH. SQUARE "D" MODEL 8903 LG1200V02 OR EQUAL.
  - ⑥ PROVIDE AN ASTRONOMIC TIMER. INTERMATIC MODEL ET70415C OR EQUAL.
  - ⑦ PROVIDE A PHOTO CELL. INTERMATIC MODEL K1221 OR EQUAL.
  - ⑧ IRRIGATION CONTROLLER TO BE CONNECTED TO CIRCUIT A-29.
  - ⑨ PROVIDE 20A WEATHERPROOF GFCI DUPLEX RECEPTACLE WITH IVORY COLOR. LEVITON MODEL W7599 OR EQUAL.
  - ⑩ PROVIDE A 6"x6" NEMA 1, STEEL WIREWAY, AS REQUIRED, FOR WIRING TRANSITION.

PANEL SCHEDULE														
LIGHTING PANEL: "A"										MOUNTING: SURFACE				
CKT	SERVES	WATTS/VA	BREAKER POLE	AMP	THWN WIRE	COPPER COND	L1		L2		SERVES	CKT		
							COND	WIRE	AMP	POLE				
1	PEDESTRIAN LIGHTS, WEST SIDE OF LUMPKIN ROAD-SOUTH (8)	750	2	20	6	2"					SPARE	2		
3		750										4		
5	PEDESTRIAN LIGHTS, WEST SIDE OF LUMPKIN ROAD-SOUTH (7)	660	2	20	8	2"					SPARE	6		
7		660										8		
9	PEDESTRIAN LIGHTS, WEST SIDE OF LUMPKIN ROAD-NORTH (7)	660	2	20	8	2"					SPARE	10		
11		660										12		
13	PEDESTRIAN LIGHTS, WEST SIDE OF LUMPKIN ROAD-NORTH (7)	660	2	20	6	2"					SPARE	14		
15		660										16		
17	SPARE		1	20							SPARE	18		
19	SPARE		1	20							SPARE	20		
21	SPARE		1	20							SPARE	22		
23	SPARE		1	20							SPARE	24		
25	SPARE		1	20							SPARE	26		
27	LIGHTING CONTROLS	600	1	20	12	3/4"		2"	8	20	1	120	BUS SHELTER LIGHT	28
29	IRRIGATION CONTROLLER	200	1	20	12	3/4"		3/4"	12	20	1	600	CABINET RECEPTACLE	30

L1: 3,530 WATTS  
L2: 3,450 WATTS  
TOTAL: 6,980 WATTS

1 OCTOBER 2014  
TBPE FIRM NO. F-3446

**HUNT & HUNT ENGINEERING CORP.**  
HOUSTON, TEXAS 77215  
TBPE FIRM NO. F-3446

**LAN Lockwood, Andrews & Newnam, Inc.**  
A LEQ A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
ELECTRICAL  
ONE-LINE DIAGRAM & PANEL SCHEDULE  
LE2.02

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO.: \_\_\_\_\_ FACILITY \_\_\_\_\_

DRAWING SCALE: \_\_\_\_\_ CITY DWG NO. \_\_\_\_\_

VERT: \_\_\_\_\_

HORZ: \_\_\_\_\_

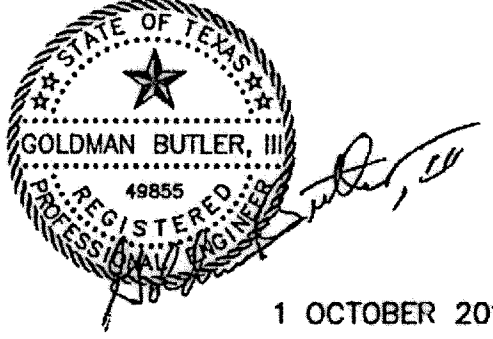
SHEET: 199 OF 226

C:\DWG\SWA Group\Lumpkin Road\LE2.02.dwg 14\_10-01 12:41:12 PM

**ELECTRICAL SPECIFICATIONS**

1. **SCOPE:** SCOPE OF WORK INCLUDES INSTALLATION OF ONE (1) NEW ELECTRICAL SERVICE TO SERVE NEW PEDESTRIAN LIGHTS AND METRO BUS SHELTER LIGHTING. CONTRACTOR FOR THIS DIVISION SHALL PROVIDE AND INSTALL A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM CONSISTING OF REQUIRED ELECTRICAL COMPONENTS. SHALL INCLUDE BUT NOT NECESSARILY LIMITED TO, POWER CABINET, PANELBOARD, LIGHTING CONTACTORS, CONDUITS, RACEWAYS, CONDUIT BODIES, WIRES, CABLES, FITTINGS, TESTING OF INSTALLED SYSTEMS, EXCAVATION AND COORDINATION WITH POWER COMPANY AND OTHER TRADES. CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF ALL LIGHTS WITH THE ARCHITECT. BEFORE ROUGH-IN, RELOCATE EQUIPMENT CONNECTIONS AS DIRECTED BY OWNER/ARCHITECT AT NO CHANGE IN CONTRACT PRICE.
2. **SITE VISIT AND FAMILIARIZATION:** CONTRACTORS PROPOSING TO UNDERTAKE WORK UNDER THIS DIVISION SHALL VISIT THE SITE OF THE WORK, AND FULLY INFORM THEMSELVES OF ALL CONDITIONS THAT AFFECT THE WORK, OR COST THEREOF. CONTRACTOR SHALL EXAMINE THE DRAWINGS AND SPECIFICATIONS AS RELATED TO THE SITE CONDITIONS. CONTRACTOR SHALL VERIFY THE CONDITION OF THE EXISTING ELECTRICAL DISTRIBUTION SYSTEM AND COMPARE WITH WHAT IS SHOWN ON THE CONSTRUCTION DOCUMENT. ANY DISCREPANCY SHALL BE REPORTED TO OWNER/ARCHITECT. FAILURE TO DO SO WILL NOT BE AN ACCEPTABLE CAUSE FOR A CHANGE IN CONTRACT PRICE AFTER AWARD OF CONTRACT. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES PRIOR TO STARTING WORK.
3. **NOTICE:** CONSIDERATION WILL NOT BE GRANTED FOR ANY ALLEGED MISUNDERSTANDING OF THE AMOUNT OF WORK TO BE PERFORMED. TENDER OF A PROPOSAL SHALL CONVEY FULL AGREEMENT TO ALL ITEMS AND CONDITIONS SPECIFIED, INDICATED ON THE DRAWINGS AND/OR REQUIRED BY NATURE OF THE SITE.
4. **DISCREPANCIES:** SHOULD CONTRACTOR FIND DISCREPANCIES OR OMISSIONS IN THE CONTRACT DOCUMENTS, OR BE IT DOUBT AS TO THE INTENT THEREOF, HE/SHE SHALL IMMEDIATELY OBTAIN CLARIFICATION FROM THE ENGINEER BEFORE SUBMITTING PROPOSAL FOR WORK IN THIS DIVISION.
5. **TIMELY PLACING OF MATERIALS AND EQUIPMENT:** ALL ELECTRICAL APPARATUS SHALL BE INSTALLED AT THE PROPER TIME DURING PROGRESS OF CONSTRUCTION. COORDINATE WORK OPERATIONS WITH OTHER TRADES.
6. **SPACE REQUIREMENTS:** CONTRACTOR FOR WORK UNDER THIS DIVISION SHALL BE FULLY RESPONSIBLE FOR DETERMINING IN ADVANCE OF PURCHASE THAT EQUIPMENT AND MATERIALS PROPOSED FOR INSTALLATION SHALL FIT INTO THE CONFINES INDICATED.
7. **MANUFACTURER'S LITERATURE:** DELIVER ALL PRINTED TAGS, INSTRUCTIONS, CERTIFIED DRAWINGS, PARTS LISTS, CERTIFICATES, ETC., SUPPLIED WITH EQUIPMENT ITEMS, TO THE OWNER REPRESENTATIVE.
8. **CODES, PERMITS AND FEES:** WORK UNDER THIS DIVISION SHALL BE CONSTRUCTED IN STRICT CONFORMANCE WITH THE REQUIREMENTS OF CITY OF HOUSTON AND STATE BUILDING CODES.
  - A. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION STANDARD OF INSTALLATIONS AND NEMA PB-1.
  - B. OBTAIN ALL REQUIRED PERMITS. PAY ALL LEGAL FEES FOR PERMITS AND INSPECTIONS BY AUTHORITIES HAVING JURISDICTION.
9. **PROTECTION OF APPARATUS:** TAKE ALL PRECAUTIONS NECESSARY FOR PROPER PROTECTION OF NEW AND EXISTING EQUIPMENT, APPARATUS AND MATERIALS FROM DAMAGE. FAILURE TO DO SO WILL BE CAUSE FOR REJECTION OF ANY ITEM COMING UNDER QUESTION.
10. **SHOP DRAWINGS:** CONTRACTOR FOR THIS DIVISION SHALL SUBMIT SHOP DRAWINGS AND CATALOGUE DATA ON ALL MAJOR ITEMS OF EQUIPMENT, SYSTEMS AND OTHER MATERIAL REQUESTED BY OWNER. SUBMIT SIX (6) COPIES WITHIN THIRTY (30) DAYS AFTER CONTRACT AWARD, AND IN NOT MORE THAN TWO (2) GROUPS OF SUBMITTALS. SUBMITTALS SHALL CONSIST OF CUT SHEETS AND OPERATING AND PERFORMANCE DATA. ALLOW FIVE (5) DAYS FOR REVIEW AND APPROVAL OF THE SHOP DRAWINGS BY ENGINEER.
11. **WORK IN OTHER DIVISIONS:** SEE CIVIL AND LANDSCAPE DRAWINGS FOR RELATED WORK.
12. **MATERIALS AND WORKMANSHIP:** ALL MATERIALS AND EQUIPMENT SHALL BE NEW, OF BEST GRADE OF STANDARD MANUFACTURE AND APPROVED BY UL, AND BE SO LABELED, FOR WIRE AND CABLE, MARKED AS REQUIRED BY ART. 310, NEC, AND INSTALLED BY SKILLED ELECTRICIANS, WORKING UNDER THE DIRECT SUPERVISION OF COMPETENT AND EXPERIENCED FOREMAN AND/OR SUPERINTENDENT. PRODUCTS SHALL BE INSTALLED IN A THOROUGH WORKMANLIKE MANNER, PRESENTING A NEAT, CLEAN-CUT APPEARANCE WHEN COMPLETED. ANY PART OR PARTS NOT MEETING THIS REQUIREMENT SHALL BE REPLACED OR REBUILT WITHOUT EXTRA EXPENSE TO OWNER.
13. **WIRING METHODS:** THE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW THE GENERAL LOCATIONS OF EQUIPMENT AND ARRANGEMENT OF CIRCUITS ONLY. EXACT LOCATIONS SHALL BE DETERMINED BY ACTUAL MEASUREMENT AT THE SITE. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL RISES, DROPS, OFFSETS, ETC. NECESSARY TO AVOID CONFLICT WITH EXISTING UTILITY LINES AND SIMILAR ITEMS, WHEN INSTALLING ELECTRICAL CONDUITS. INSTALL EXPOSED CONDUIT AS SHOWN OR NOTED, PARALLEL TO HORIZONTAL AND VERTICAL LINES OF SITE. MAKE BENDS WITH 90 DEGREE TURN MAXIMUM, OR WITH APPROVED FITTINGS.
14. **CONDUIT:** FURNISH A COMPLETE RACEWAY SYSTEM FOR, BUT NOT LIMITED TO, FEEDER, BRANCH CIRCUITS, CONTROL WIRING AND AUXILIARY SYSTEM WIRING. RACEWAY SYSTEMS INSTALLED SHALL BE APPROVED FOR OUTDOOR.
  - A. USE LIQUIDTIGHT FLEXIBLE METAL CONDUIT AND FITTINGS WHERE THE EQUIPMENT IS SUBJECT TO MOVEMENT OR LOCATED OUTDOORS.
  - B. USE OF EMT IS NOT PERMITTED. USE PVC COVERED RIGID GALVANIZED CONDUIT FOR ALL EXPOSED OUTDOOR LOCATIONS.
  - C. WHERE ENTERING THE PANELS, PULL BOXES, J-BOXES OR OUTLET BOXES, RACEWAY SHALL BE SECURED IN PLACE WITH LOCK-NUTS INSIDE AND OUTSIDE, AND INSULATED BUSHING INSIDE.
  - D. BENDS AND OFFSETS MADE WITH APPROVED TOOLS ONLY. BENDS OR OFFSETS IN WHICH THE PIPE IS CRUSHED OR DEFORMED SHALL NOT BE INSTALLED.
  - E. WHERE NOT EMBEDDED IN CONCRETE OR MASONRY, RACEWAY SHALL BE FIRMLY SECURED BY APPROVED CLAMPS, STRAPS OR HANGERS.
  - F. USE COMPRESSION TYPE FITTINGS. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
  - G. USE PVC CONDUIT FOR INSTALLATION UNDERGROUND.
15. **OUTLET AND JUNCTION BOXES:** FURNISH AND INSTALL ALL JUNCTION BOXES REQUIRED TO FACILITATE INSTALLATION OF VARIOUS CONDUIT SYSTEMS. BOXES SHALL BE APPROVED FOR INTENDED USE AND APPLICATIONS. BOXES SHALL BE 2-1/2" MINIMUM DEPTH. SWITCH BOXES ARE NOT ALLOWED.
16. **WIRE AND CABLE:**
  - A. ALL WIRE AND CABLE SHALL BE OF SOFT DRAWN, ANNEALED, COPPER HAVING A CONDUCTIVITY OF NOT LESS THAN 98% OF THAT OF PURE COPPER; UNIFORM IN CROSS SECTION AND FREE FROM FLAWS, SCALES AND OTHER IMPERFECTIONS.
  - B. ACCEPTABLE MANUFACTURERS: AMERICAN INSULATED WIRE CORP., TRIANGLE, GENERAL ELECTRIC, OKONITE OR ANACONDA.
  - C. DO NOT USE SOLID CONDUCTORS.
  - D. ALL WIRE AND CABLE SHALL NOT BE PULLED INTO A CONDUIT UNTIL ALL WORK WHICH MAY CAUSE INJURY IS COMPLETE. WHERE TWO (2) OR MORE CIRCUITS RUN TO A SINGLE OUTLET BOX, TAG EACH CIRCUIT.
  - E. ALL WIRE AND CABLE SHALL HAVE ALL STRANDED CONDUCTORS FURNISHED WITH COPPER CONNECTING LUGS, SIZED FOR THE FULL DIAMETER OF THE BARE CONDUCTORS. MAINS AND FEEDERS SHALL BE RUN THEIR ENTIRE LENGTH IN CONTINUOUS PIECES WITHOUT JOINTS OR SPLICES.

- F. PROVIDE CABLE DESIGNATED AS THWN/THHN OR XHHW SINGLE CONDUCTOR TYPE AND UL 83 AND UL 1063 LISTED, RATED 600 VOLTS AND CERTIFIED FOR CONTINUOUS OPERATION AT MAXIMUM CONDUCTOR TEMPERATURE OF 90°C IN DRY LOCATIONS AND 75°C IN WET LOCATIONS WHILE INSTALLED IN UNDERGROUND DUCT, CONDUIT OR IN CONTROL PANELS (MTW).
  - G. PROVIDE CONDUCTORS WHICH ARE CLASS B, CONCENTRIC STRANDED, ANNEALED UNCOATED COPPER WITH PHYSICAL AND ELECTRICAL PROPERTIES COMPLYING WITH ASTM B3 AND B8 AND OF ICEA S-95-65B/NEMA WC70.
  - H. EACH CONDUCTOR SHALL BE PVC INSULATED AND NYLON JACKETED TO MEET THE REQUIREMENTS OF ICEA S-95-65B/NEMA WC70. THE INSULATION THICKNESS SHALL MATCH THE DIMENSIONS LISTED IN NEC TABLE 310.13 FOR TYPE THHN AND THWN WIRE.
  - I. TERMINAL LUGS AND CONNECTORS ON BUSBARS FOR ALL SIZES OF CONDUCTORS SHALL BE COMPRESSION CRIMP-ON TYPE.
  - J. FOR SIZE 1/0 AWG AND LARGER, CRIMP-ON LUGS SHALL HAVE THE LONG BARREL WITH 2-HOLE COMPRESSION CRIMP-ON TYPE EXCEPT IN PLACES WHERE TERMINATION SPACE IS LIMITED.
17. **IDENTIFICATION OF CONDUCTORS AND PANELBOARD ELEMENTS:**
    - A. EACH AND EVERY MAIN AND FEEDER CONDUCTOR SHALL BE IDENTIFIED AT EACH OUTLET POINT WHERE SUCH CONDUCTOR TERMINATES. FEEDER BUNDLES PASSING THROUGH A JUNCTION OR SUPPORT BOX SHALL ALSO BE IDENTIFIED WITHIN SUCH ENCLOSURE, BUT MAY BE IDENTIFIED IN SUCH LOCATIONS AS A GROUP.
    - B. IDENTIFY BY USE OF PERMANENT TYPE BANDS, BRADY OR T AND B. A DEFINITE NUMBER AND/OR LETTER CODE SHALL BE EMPLOYED AND BE UNIFORM THROUGHOUT EACH CONDUCTOR.
    - C. IDENTIFY EACH SWITCH, INCLUDING MAIN DISCONNECT WITH WHITE-ON-BLACK NAMEPLATE, EACH HAVING 1/4" HIGH LETTERS. NEATLY AND SECURELY ADHERE NAMEPLATES TO THE UNIT.
  18. **SWITCHES:** FURNISH AND INSTALL ALL FUSIBLE AND NON-FUSIBLE SWITCHES AS REQUIRED BY CODES, WHETHER OR NOT SHOWN AND/OR NOTED. SWITCHES SHALL BE:
    - A. HEAVY DUTY WITH NEMA 1 OR 3R ENCLOSURE, AS REQUIRED, AND BE PROVIDED WITH PAD-LOCKING FEATURE.
    - B. SWITCH MANUFACTURER SHALL BE GE, CUTLER-HAMMER OR SQUARE D.
    - C. CIRCUIT BREAKER: MOLDED CASE, BOLTED TYPE QUICK MAKE, QUICK BRAKE. CIRCUIT BREAKERS SHALL BE MANUFACTURED BY THE SAME MANUFACTURER AS THE PANELBOARD.
    - D. IDENTIFY EACH DEVICE WITH NAMEPLATE SHOWING THE SOURCE TAG NUMBER, MATCHING THE EXISTING NAMEPLATES.
  19. **WIRING DEVICES:** FURNISH AND INSTALL ALL WIRING DEVICES AS INDICATED ON THE DRAWINGS. DEVICES FURNISHED SHALL IN ALL CASES BE SUITABLE FOR THE USE INTENDED AND SHALL HAVE VOLTAGE AND CURRENT RATINGS ADEQUATE FOR THE LOADS TO BE SERVED.
    - A. MOUNTING: HEIGHTS OF ALL DEVICES ARE FROM FINISH SURFACE TO BOTTOM OF DEVICE.
    - B. CONVENIENCE OUTLETS: SHALL BE GROUNDING TYPE, 20 AMP, 125 VOLT, LEVITON IVORY COLOR. WEATHERPROOF DUPLEX OUTLETS SHALL BE AS SPECIFIED ON THE DRAWINGS. PROVIDE NEMA 5-20R DEVICES UNLESS OTHERWISE NOTED.
    - C. ACCEPTABLE MANUFACTURERS SHALL BE HUBBELL, P&S LEVITON AND BRYANT. ONE (1) MANUFACTURER SHALL BE USED THROUGHOUT THE WORK.
    - D. INSTALL WIRING DEVICES AND ACCESSORIES PLUMB AND LEVEL, IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, APPLICABLE REQUIREMENTS OF NEC AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO FULFILL PROJECT REQUIREMENTS.
    - E. TIGHTEN CONNECTORS AND TERMINALS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S PUBLISHED TORQUE VALUES FOR WIRING DEVICES.
    - F. COORDINATE AS NECESSARY TO INTERFACE INSTALLATION OF WIRING DEVICES WITH OTHER WORK.
    - G. INSTALL WIRING DEVICES AFTER WORK IS COMPLETED. INSTALL ONLY IN ELECTRICAL BOXES THAT ARE CLEAN, FREE FROM EXCESS BUILDING MATERIALS, DIRT AND DEBRIS. INSTALL COVER PLATES AFTER ALL TESTING IS COMPLETED.
    - H. INSTALL RECEPTACLES WITH GROUND PIN DOWN.
    - I. ALL EXTERIOR DEVICES TO BE WEATHERPROOF AND ALL RECEPTACLES SHALL BE GFCI TYPE DEVICES.
  20. **PANELBOARDS:** PANELBOARDS SHALL BE GE TYPE AQ, OR APPROVED EQUAL. REFER TO CONSTRUCTION DOCUMENTS FOR THE SIZE AND NUMBER OF BRANCH CIRCUIT BREAKERS. ALL PANELBOARD BUSSING SHALL BE COPPER. PANELBOARDS SHALL BE IN OUTDOOR ENCLOSURE WHERE INSTALLED OUTDOOR. MINIMUM INTERRUPTING RATING FOR PANELS SHALL BE 22,000A. PANELBOARDS SHALL HAVE PRINTED DIRECTORY CARDS IN A METALLIC HOLDER TACK WELDED TO THE INSIDE FACE OF THE PANELBOARD DOOR. PANELBOARD DOORS SHALL BE LOCKING TYPE. DIRECTORY CARDS SHALL SHOW ACTUAL LOAD AND LOCATION.
  21. **GROUNDING:** ALL CONDUIT WORK, LIGHTING AND OTHER ELECTRICAL EQUIPMENT WIRED AND CONNECTED BY THIS CONTRACTOR SHALL BE EFFECTIVELY AND PERMANENTLY GROUNDED IN FULL ACCORDANCE WITH NEC 250. USE THE EXOTHERMIC WELDING PROCESS FOR BELOW-GRADE GROUNDING CONNECTIONS, EXCEPT AT GROUND RODS. USE MECHANICAL CONNECTORS OR THERMAL CONNECTIONS FOR ABOVE-GRADE GROUNDING CONNECTIONS AS SHOWN ON THE DRAWINGS.
  22. **OTHER MATERIALS:** FURNISH AND INSTALL ALL OTHER MATERIALS SUCH AS HARDWARE, TAPE, CLAMPS, CONNECTORS, FITTINGS, SUPPORTS AND ALL OTHER APPURTENANCES REQUIRED TO COMPLETE THE WORK TO THE FULL INTENT OF THE CONTRACT. TERMINAL LUGS SHALL BE FURNISHED BY ELECTRICAL CONTRACTOR.
  23. **LUMINARIES:** FURNISH AND INSTALL NEW LUMINARIES AS SHOWN ON PLANS. REFER TO LANDSCAPE ARCHITECT DRAWINGS FOR EXACT LOCATION OF LUMINARIES.
  24. **TESTS:**
    - A. TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH NETA ACCEPTANCE TESTING SPECIFICATIONS, ICEA AND NEMA PB-1.
    - B. OWNER AND ENGINEER SHALL BE GIVEN REASONABLE ADVANCE NOTICE TO WITNESS AT HIS/HER DISCRETION ALL INSPECTIONS, CHECKS, ADJUSTMENTS, CALIBRATIONS AND TESTS REQUIRED BY THIS SPECIFICATION. THE RESULTS, READINGS, SETTINGS, MEASUREMENTS AND DATA OF ALL INSPECTIONS, CHECKS, ADJUSTMENTS, CALIBRATIONS AND TESTS SHALL BE RECORDED BY THE CONTRACTOR AND SUBMITTED TO ENGINEER.
    - C. SUBMIT FOUR (4) COPIES OF CERTIFIED TEST RESULTS FOR APPROVAL.
    - D. CONDUCT A THERMOGRAPHIC TEST OF THE PANELBOARD(S) AND ALL OTHER ELECTRICAL POWER DISTRIBUTION APPARATUS USING AN INFRARED TEMPERATURE-SCANNING DEVICE. THE TEST SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY. CONNECTIONS INDICATING HIGHER TEMPERATURE LEVELS THAN ARE ACCEPTABLE SHALL BE TIGHTENED OR CORRECTED AS REQUIRED TO ELIMINATE THE ABNORMAL CONDITION.
    - E. CONDUCT AND DOCUMENT THE THERMOGRAPHIC TEST BETWEEN FOUR (4) AND SIX (6) MONTHS OF BENEFICIAL OCCUPANCY OF THE PROJECT AND COMPLETE ALL CORRECTIONS OF ABNORMAL CONDITIONS PRIOR TO COMPLETION OF THE FIRST YEAR OF THE WARRANTY PERIOD.
  25. AT COMPLETION OF WORK, PROVIDE OWNER WITH A SET OF RECORD DRAWINGS PER CITY OF HOUSTON REQUIREMENTS.



1 OCTOBER 2014  
TBPE FIRM NO. F-3446

---

**HUNT & HUNT ENGINEERING CORP.**  
HOUSTON, TEXAS 77215  
TBPE FIRM NO. F-3446

---

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

---

LUMPKIN ROAD  
N-117000-0012-3

---

ELECTRICAL SPECIFICATIONS

---

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

---

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
VERT: HORZ:	
SHEET: 200 OF 226	

APP. REVISIONS DATE No. 14\_10-01 12:41:34 PM C:\DWG\SWA Group\Lumpkin Road\LE2.03.dwg



APP.	
REVISIONS	
DATE	
No.	

**BENCHMARK:**  
 CITY OF HOUSTON SURVEY MARKER STAMPED  
 4958/7710 LOCATED AT EAST SIDE OF  
 LUMPKIN RD, 110 FEET SOUTHWEST OF  
 LARSTON DR. INTERSECTION IN KEYMAP 449Z  
 ELEV.=82.16 FEET (NAVD 86\GEOID03).

**GENERAL NOTES:**

THE CONTRACT DOCUMENTS ARE BASED ON THE REQUIREMENTS OF 2012 INTERNATIONAL BUILDING CODE (IBC) WITH CITY OF HOUSTON ADDENDA AND AMENDMENTS IN FORCE AT THE DATE OF THESE DOCUMENTS UNLESS NOTED OTHERWISE.

**DESIGN LIVE LOADS**

WIND ..... 110 M.P.H. @ 3 SEC GUST  
 UPLIFT ..... 25 P.S.F.

**CONCRETE**

THE 28 DAY CONCRETE COMPRESSIVE STRENGTH SHALL BE 3000 P.S.I.  
 FOOTINGS - 3000 P.S.I.  
 SLAB-ON-GRADE - 3000 P.S.I.  
 GRADE BEAMS - 3000 P.S.I.

THERE SHALL BE NO HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE POURS. ALL CONSTRUCTION JOINTS SHALL BE MADE IN THE CENTER OF SPANS WITH VERTICAL BULKHEADS. THE LOCATION OF CONSTRUCTION JOINTS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. ADDITIONAL REINFORCING AT CONSTRUCTION JOINTS SHALL BE SPECIFIED BY THE ENGINEER.

**REINFORCING STEEL**

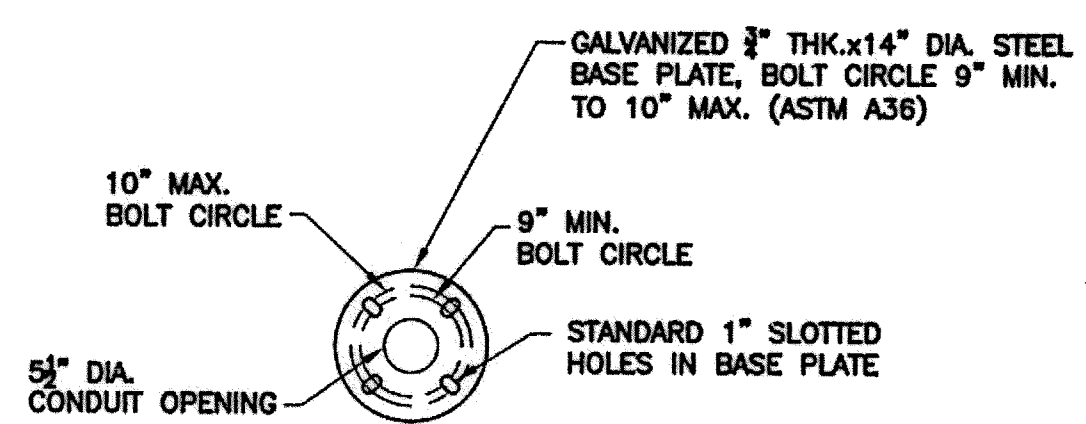
ALL REINFORCING STEEL SHALL BE GRADE 60 AND SHALL CONFORM TO THE ASTM SPECIFICATIONS A 615. DETAILING OF REINFORCING STEEL SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE DETAILING MANUAL. PROVIDE 1-#4 x 3'-0" TOP AND BOTTOM IN EXTERIOR FACE OF GRADE BEAMS AT CORNERS. WELDED WIRE FABRIC SHALL CONFORM TO ASTM SPECIFICATION A185. (FLAT SHEETS ONLY). PROVIDE PLASTIC BAR CHAIRS AT 3' - 0" MAXIMUM CTRS. EACH WAY FOR ALL TOP REINFORCING FOR SLABS-ON-GRADE. LAP CONTINUOUS UNSCHEDULED REINFORCING BARS AS FOLLOWS: @ MID SPAN ONLY. HORIZONTAL WALL STEEL SHALL BE CONTINUOUS WITH 90° BENDS AND 12" RETURNS ALONG EACH WALL AT CORNERS, OR PROVIDE 4'-0" CORNER BARS EACH FACE.  
 GRADE BEAMS - 1 1/2" TOP, 3" BOTTOM, 2" SIDES  
 SLAB-ON-GRADE - 1 1/2" (TOP)

**REPRODUCTION NOTE**

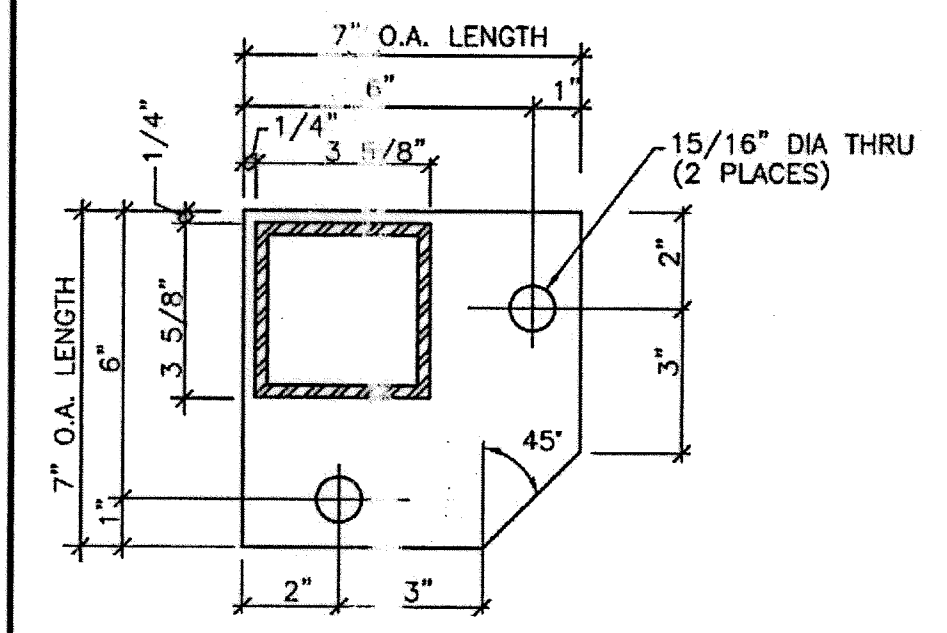
THE USE OF ELECTRONIC FILES OR REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREON.

**FOUNDATION NOTES:**

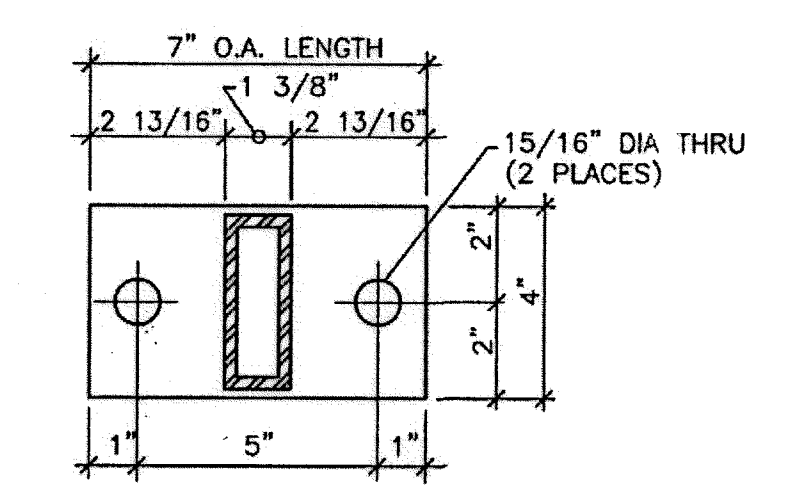
1. THE SUBSURFACE INFORMATION AND FOUNDATION DESIGN ARE PARTIALLY BASED ON GEOTECHNICAL INVESTIGATION AND FOUNDATION RECOMMENDATIONS REPORT NO. G153-10 FINAL, PREPARED BY AVILES ENGR'G CORP., 5790 WINDFARM, HOUSTON, TEXAS 77041 DATED FEBRUARY 2, 2013. THE CONTRACTOR SHALL PERFORM BACKFILL AND EXCAVATIONS, SLAB CONSTRUCTION AND PREPARATION OF THE SUBGRADE UNDER THE SLAB-ON-GRADE IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE PROJECT SPECIFICATIONS.
2. THE FOUNDATION HAD BEEN DESIGNED FOR THE FOLLOWING ALLOWABLE SOIL BEARING PRESSURES AT A DEPTH OF APPROXIMATELY 4'-0" BELOW EXISTING GROUND SURFACE.
3. LIGHT POLE FOUNDATION 5'-0" BELOW EXISTING GRADE=.....2,000 P.S.F.  
 WELL COMPACTED SELECT FILL 2'-0" BELOW EXISTING GRADE=.....1,000 P.S.F.
4. FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION WHICH DIFFER FROM THOSE DESCRIBED IN THE GEOTECHNICAL INVESTIGATION SHALL BE REPORTED TO THE ENGINEER BEFORE FURTHER CONSTRUCTION IS ATTEMPTED.
5. ALL EXCAVATIONS SHALL BE CARRIED OUT WHEN DRY, AND PROVISIONS SHALL BE MADE TO PREVENT THE BOTTOM OF ALL EXCAVATIONS FROM FREEZING OR FLOODING AT ALL TIMES.
6. ALL FOUNDATIONS SHALL BE CONSTRUCTED IN EXCAVATIONS FREE OF STANDING WATER.
7. BACKFILL MATERIAL, PLACING AND COMPACTION OF BACKFILL SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND THE CONTRACT SPECIFICATIONS.



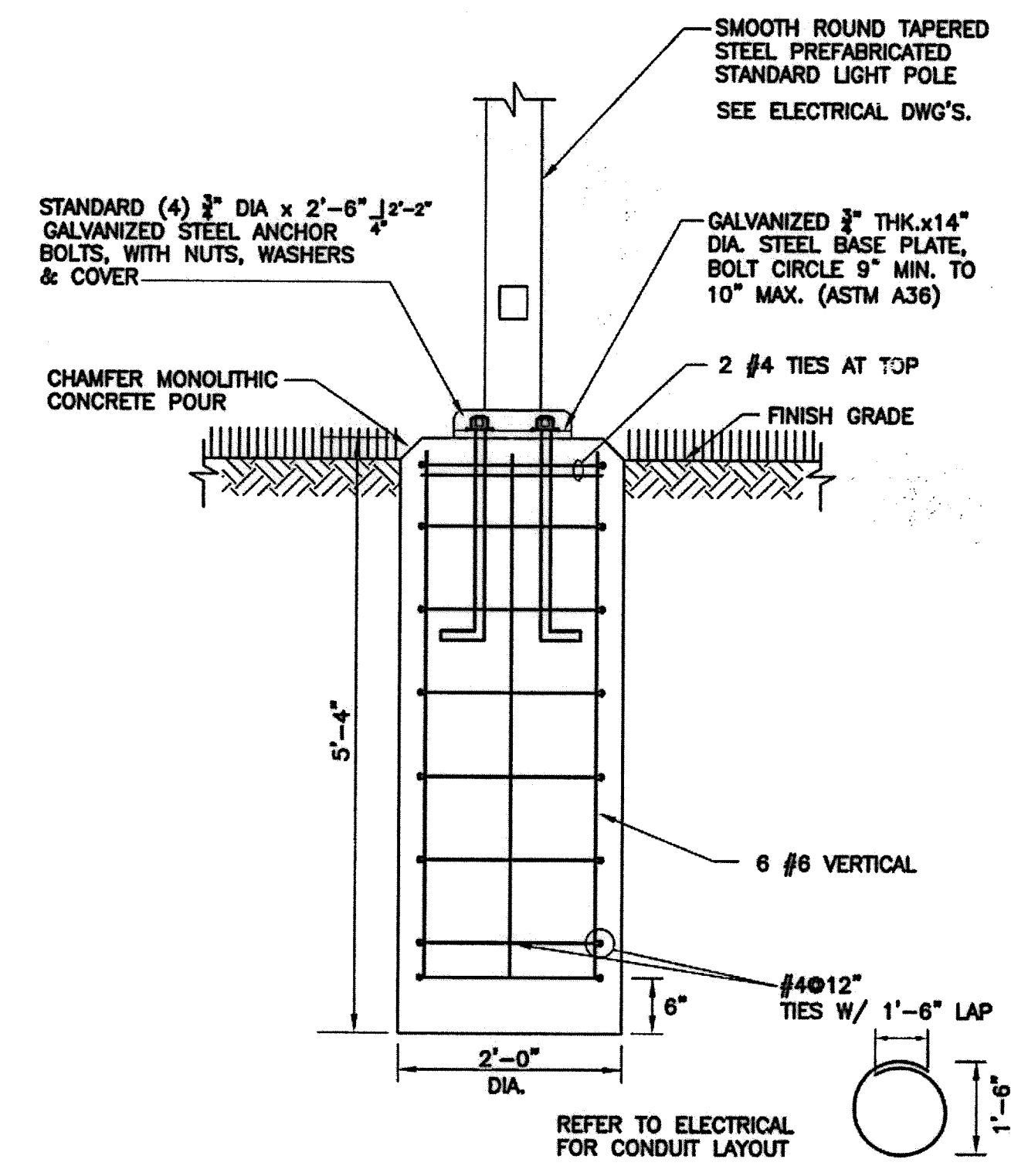
**2 BASE PLATE DETAIL**  
 201 SCALE: 3/4"=1'-0"



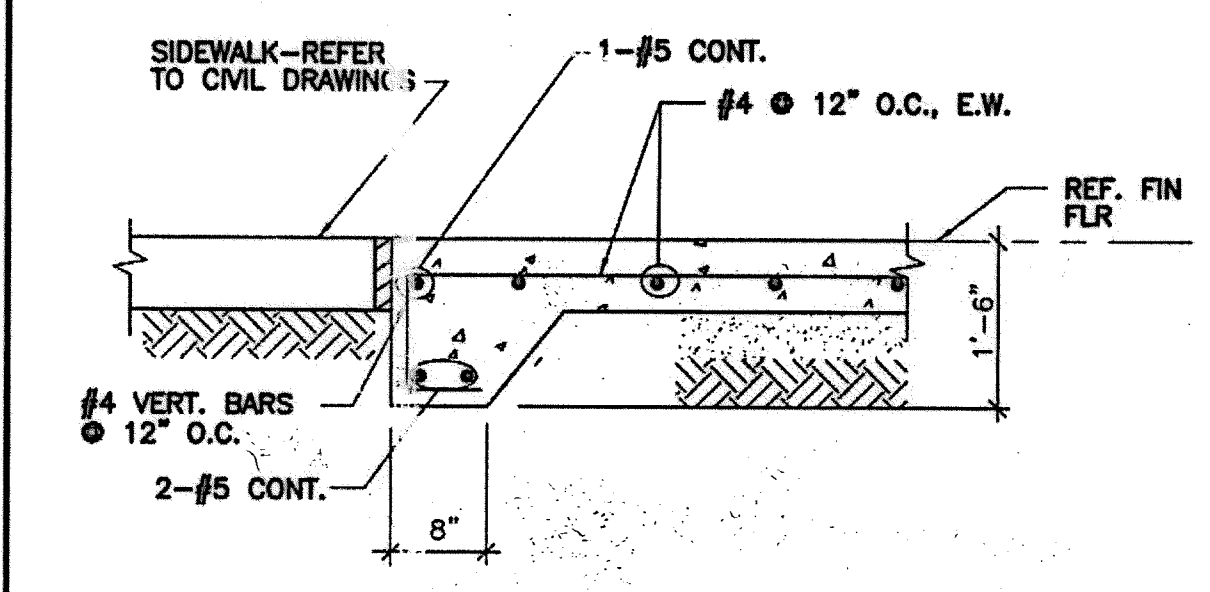
**6 ALUMINUM PLATE**  
 201 SCALE: 3/4"=1'-0"



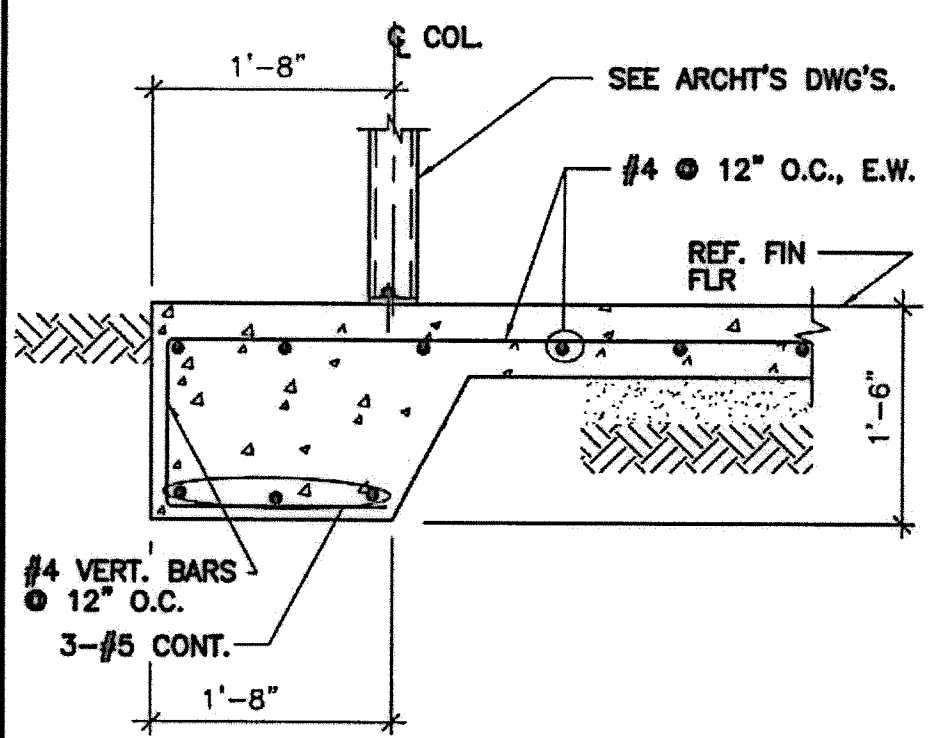
**7 ALUMINUM PLATE**  
 201 SCALE: 3/4"=1'-0"



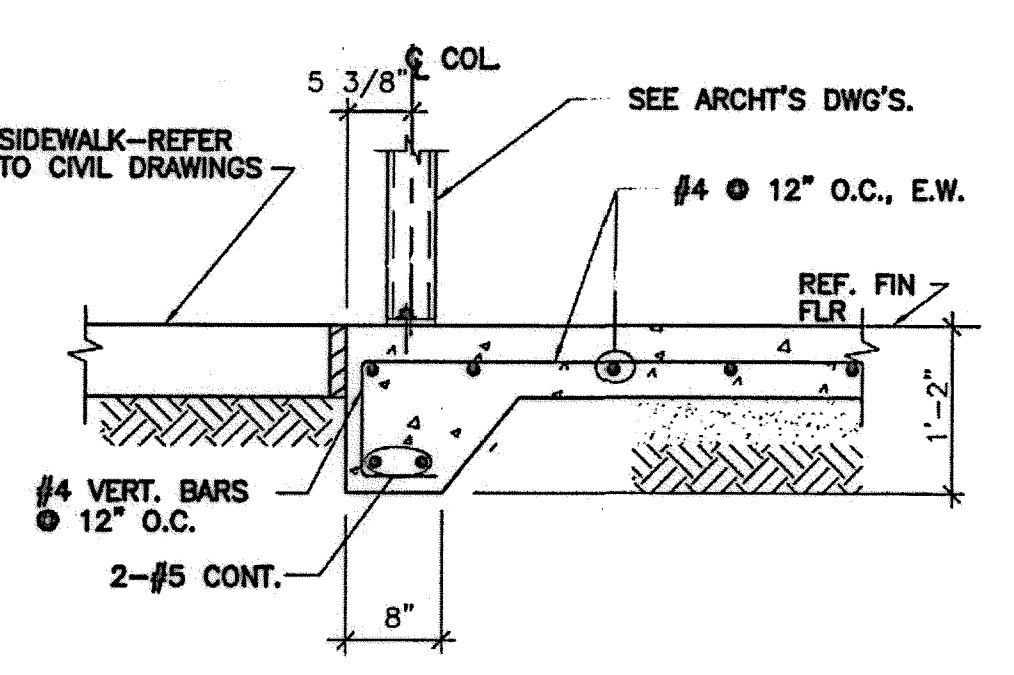
**1 LIGHT POLE DETAIL**  
 201 SCALE: 3/4"=1'-0"



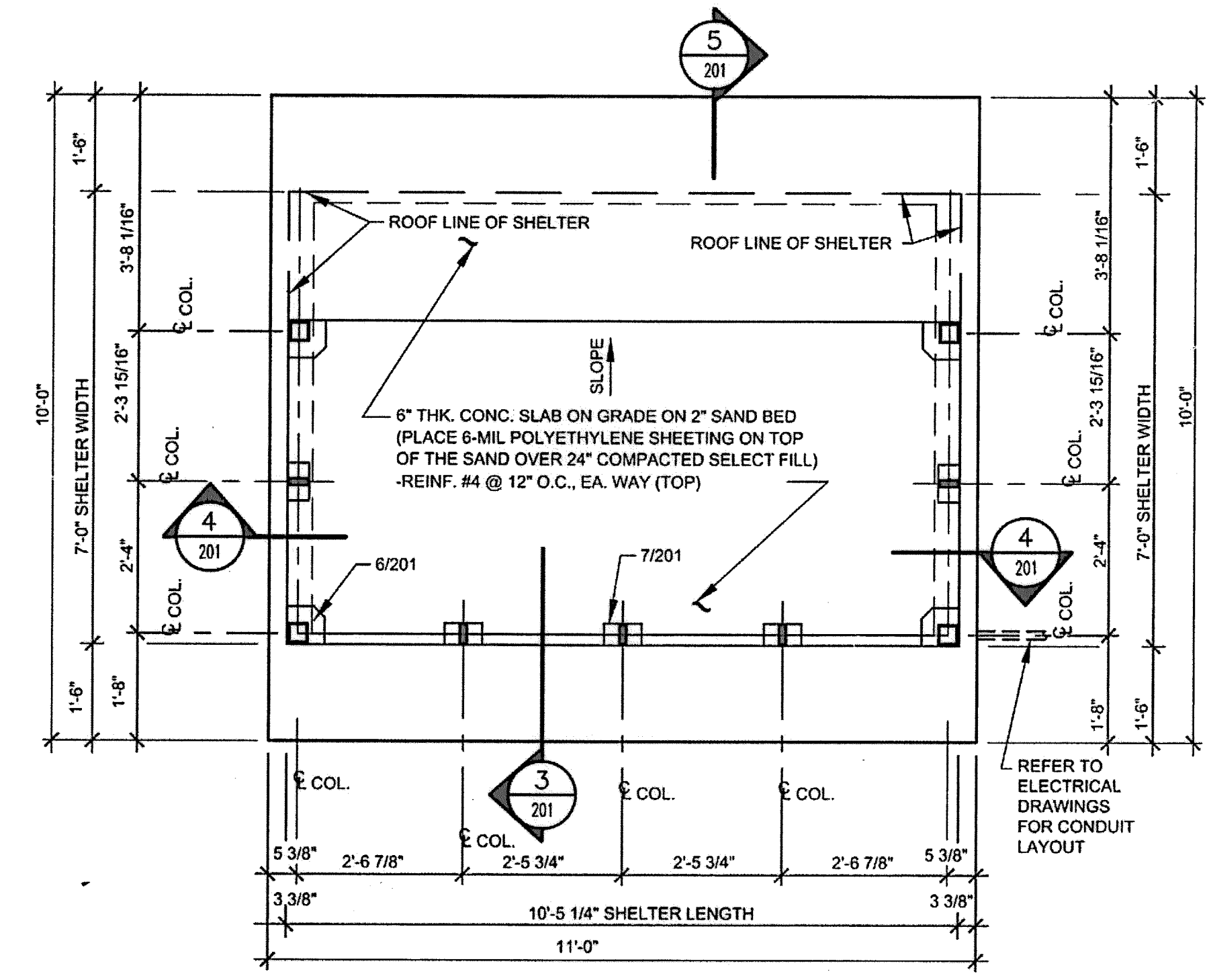
**5 SECTION**  
 201 SCALE: 3/4"=1'-0"



**3 SECTION**  
 201 SCALE: 3/4"=1'-0"

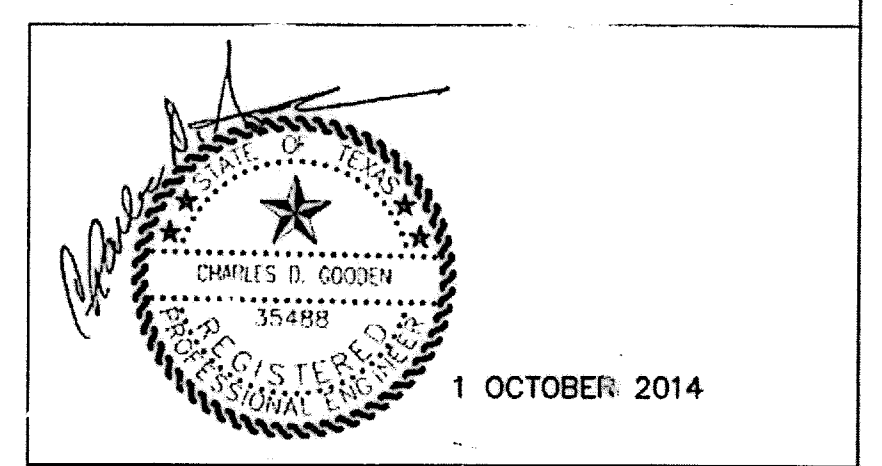


**4 SECTION**  
 201 SCALE: 3/4"=1'-0"



**SHELTER FOUNDATION FRAMING PLAN**  
 SCALE: 1/2"=1'-0"

NOTE: REFER TO ARCHT'S AND MANUFACTURER'S DRAWINGS FOR BARREL VAULT SHELTER AND LOCATION.

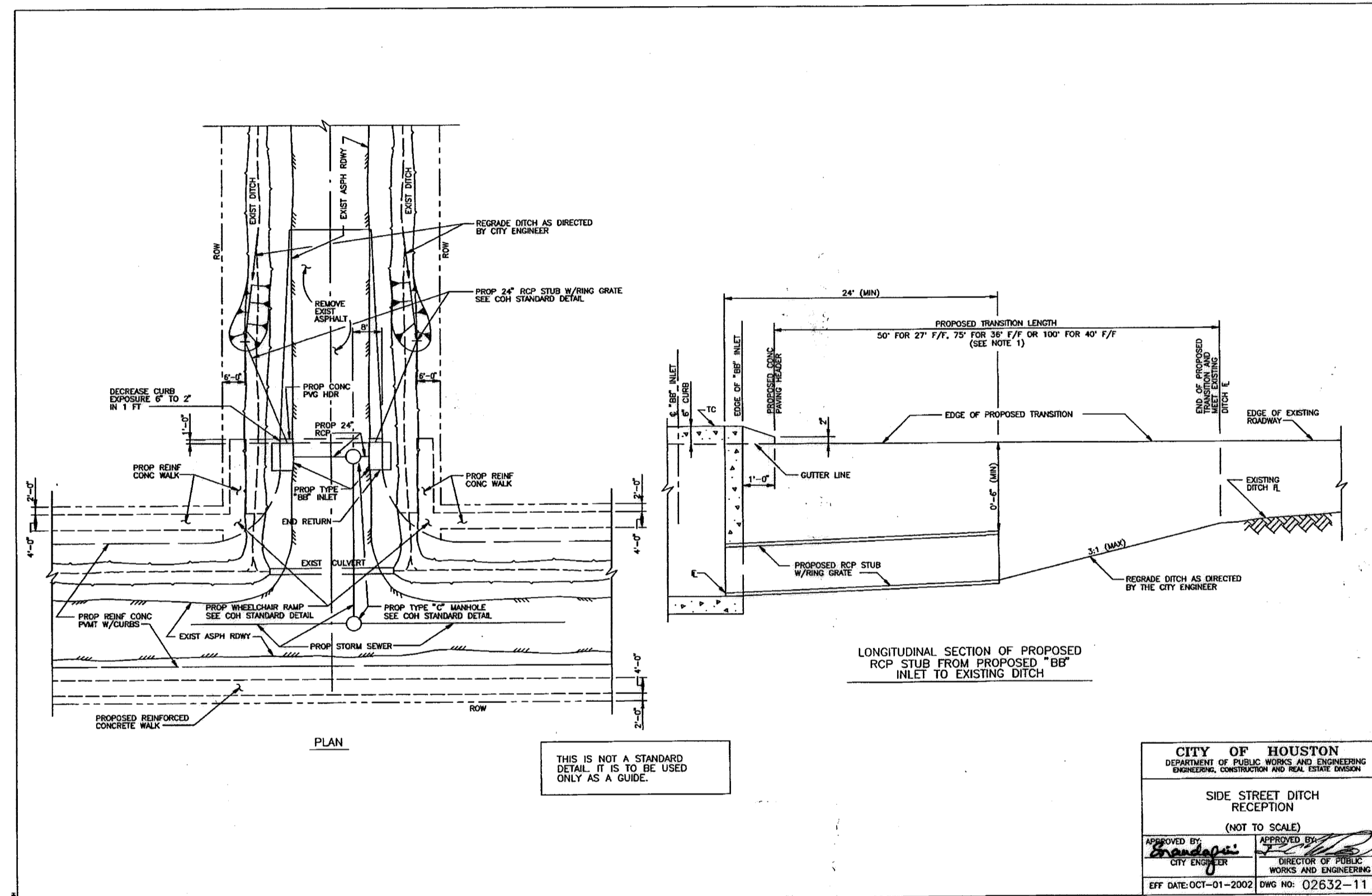


CHARLES D. GOODEN  
 CONSULTING ENGINEERS, INC.  
 TEXAS BOARD OF PROFESSIONAL ENGINEERS F-4178  
 2320 HOLMES ROAD, SUITE A  
 HOUSTON, TEXAS 77051  
 (713) 660-8805

**LAN** Lockwood, Andrews & Newnam, Inc.  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 SHELTER FOUNDATION  
 FRAMING PLAN AND DETAILS  
 LS1.00

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
VERT:		
HORZ: AS-NOTED		
SHEET:		
201	OF 226	



CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION

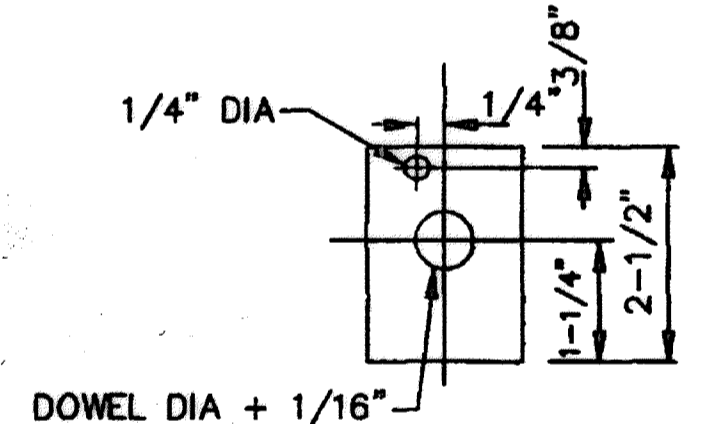
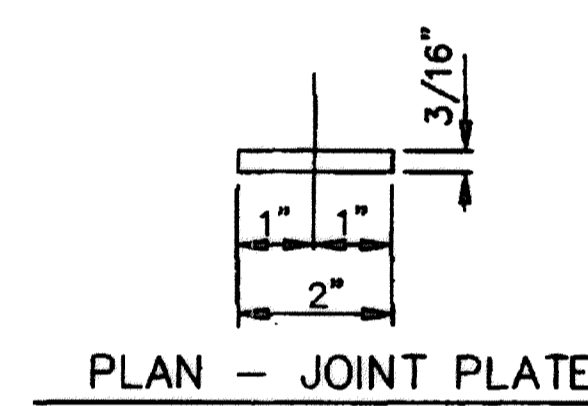
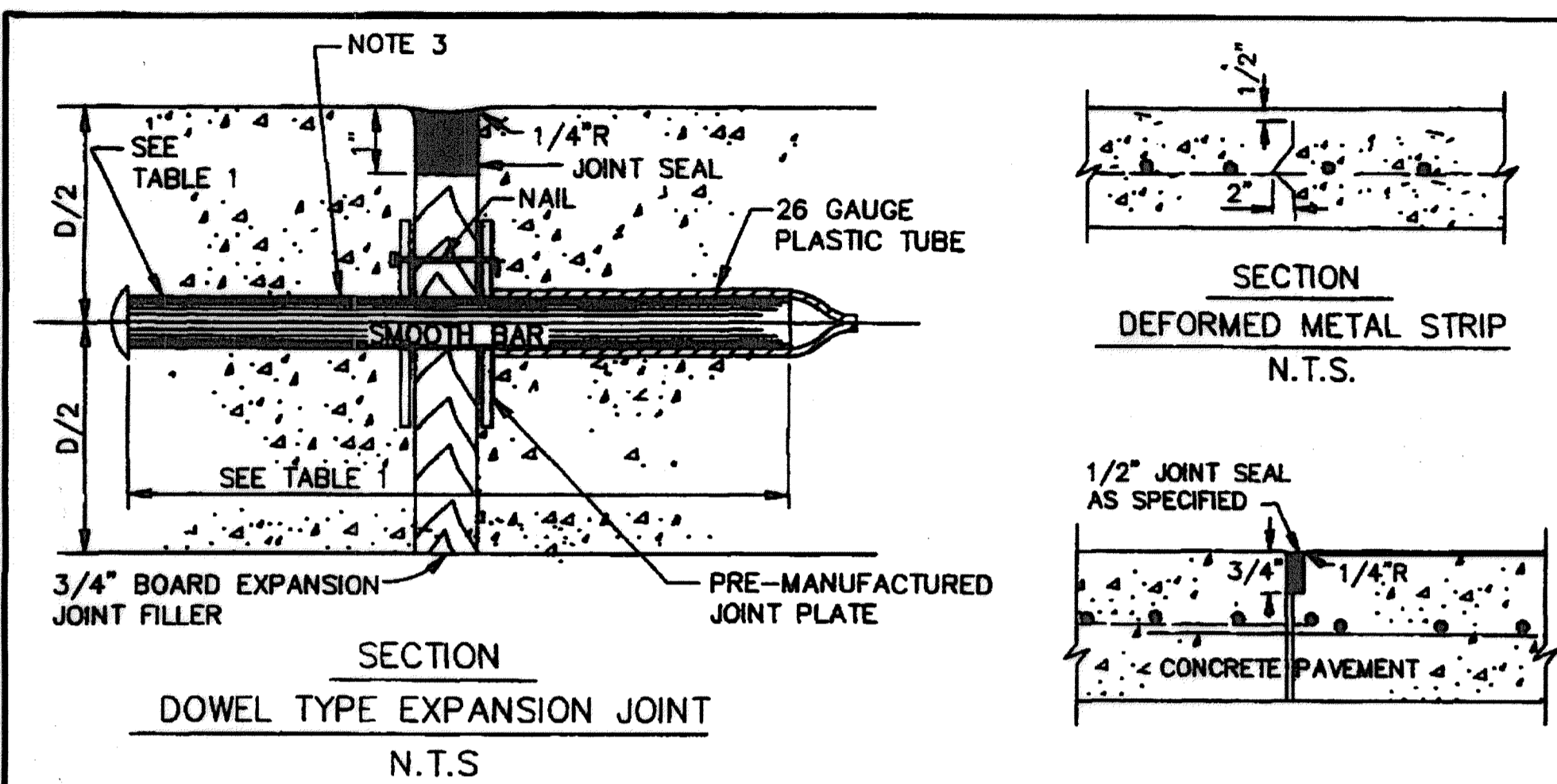
SIDE STREET DITCH  
 RECEPTION  
 (NOT TO SCALE)

APPROVED BY: *[Signature]*  
 CITY ENGINEER

APPROVED BY: *[Signature]*  
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: OCT-01-2002 DWG NO: 02632-11

THIS IS NOT A STANDARD  
 DETAIL. IT IS TO BE USED  
 ONLY AS A GUIDE.



- NOTES:
1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS. UNITS TO BE SPACED ON 12" CENTERS.
  2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS.
  3. CENTER DOWEL HORIZONTALLY ON JOINT.
  4. CENTER DOWEL VERTICALLY IN CONCRETE BASE. EXTEND THICKENED CONCRETE AS NEEDED TO MAINTAIN 3" MIN. COVER.
  5. CITY OF HOUSTON APPROVED PRODUCTS MAY BE USED AS JOINT PLATE ALTERNATIVE

TABLE 1

PAVEMENT THICKNESS (IN)	DOWEL SIZES AND SPACINGS		
	DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
6	3/4	18	12
7	1	18	12
8	1	18	12
9	1 1/4	18	12
10	1 1/4	18	12
11	1 1/4	18	12
12	1 1/4	18	12

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION

PAVEMENT EXPANSION AND CONSTRUCTION JOINT DETAILS  
 (NOT TO SCALE)

APPROVED BY: *[Signature]*  
 CITY ENGINEER

APPROVED BY: *[Signature]*  
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: June-01-2003 DWG NO: 02752-01

STATE OF TEXAS  
 MUHAMMAD M. ALI, P.E.  
 98146  
 LICENSED PROFESSIONAL ENGINEER

Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newnam, Inc.  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 PAVEMENT DETAILS

SHEET 1 OF 3

CITY OF HOUSTON  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

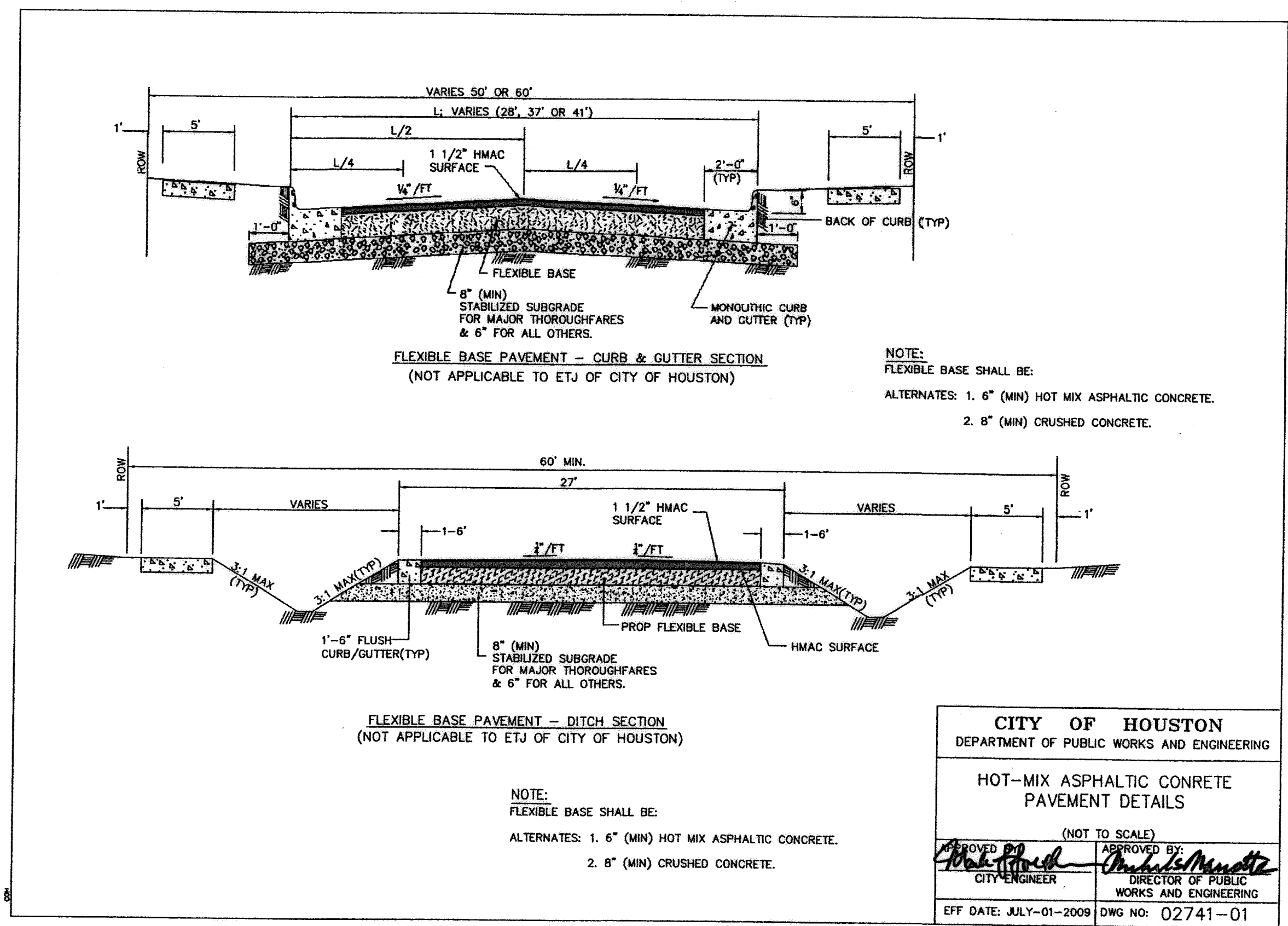
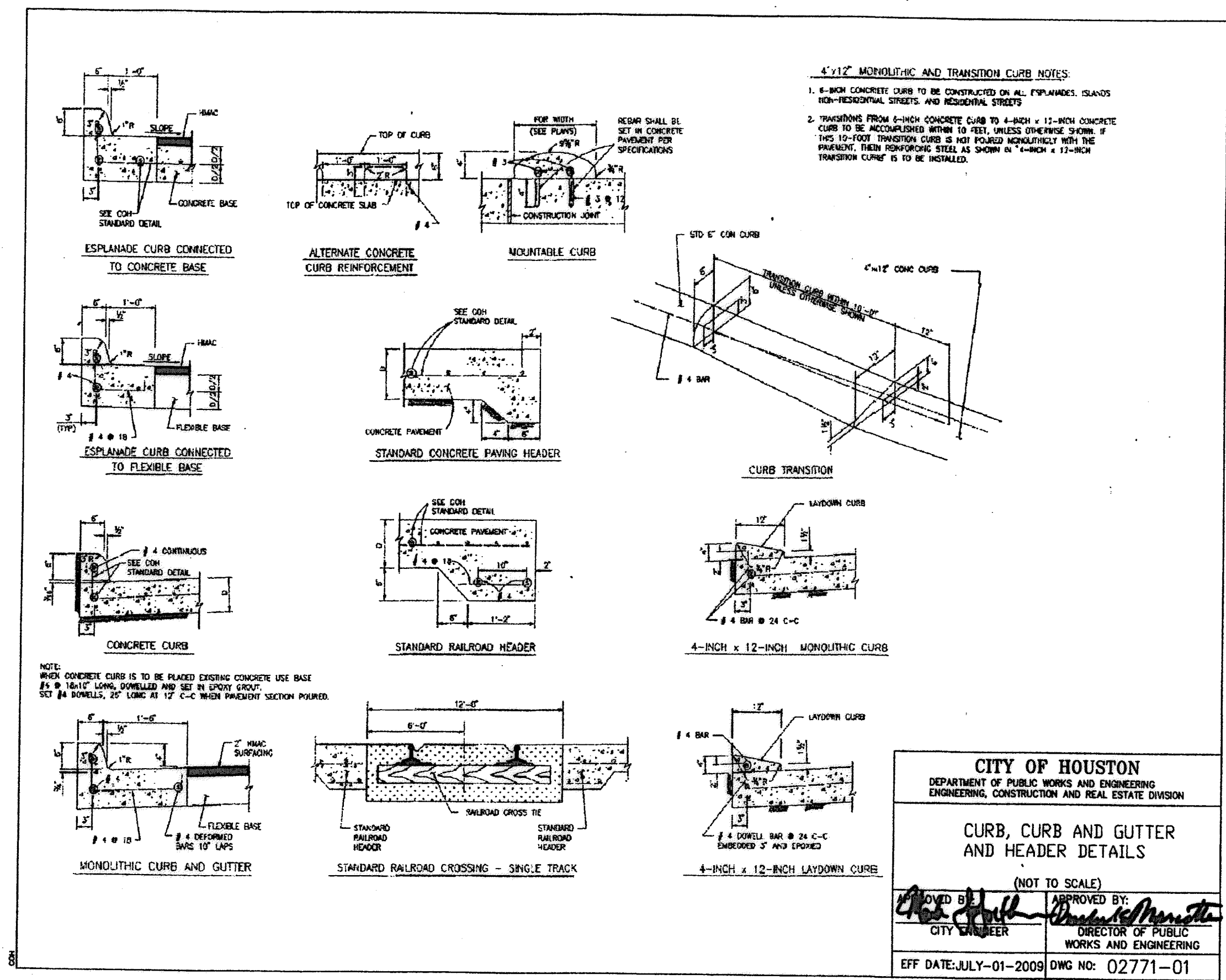
FILE NO. : FACILITY

DRAWING SCALE: CITY DWG NO.

NOT TO SCALE

SHEET: 202 OF 226

APP.
REVISIONS
No. DATE



Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
PAVEMENT DETAILS

SHEET 2 OF 3

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SRD

FILE NO.:

DRAWING SCALE:

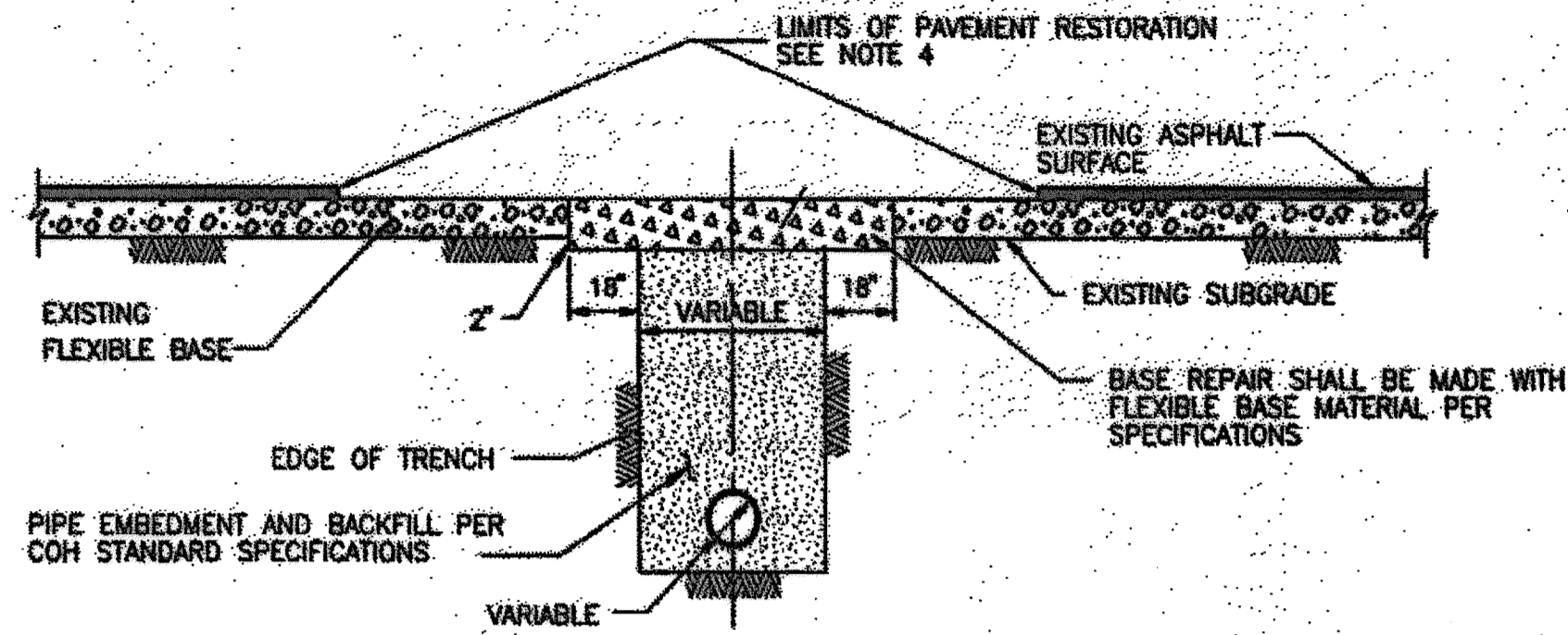
NOT TO SCALE

SHEET: 203 OF 226

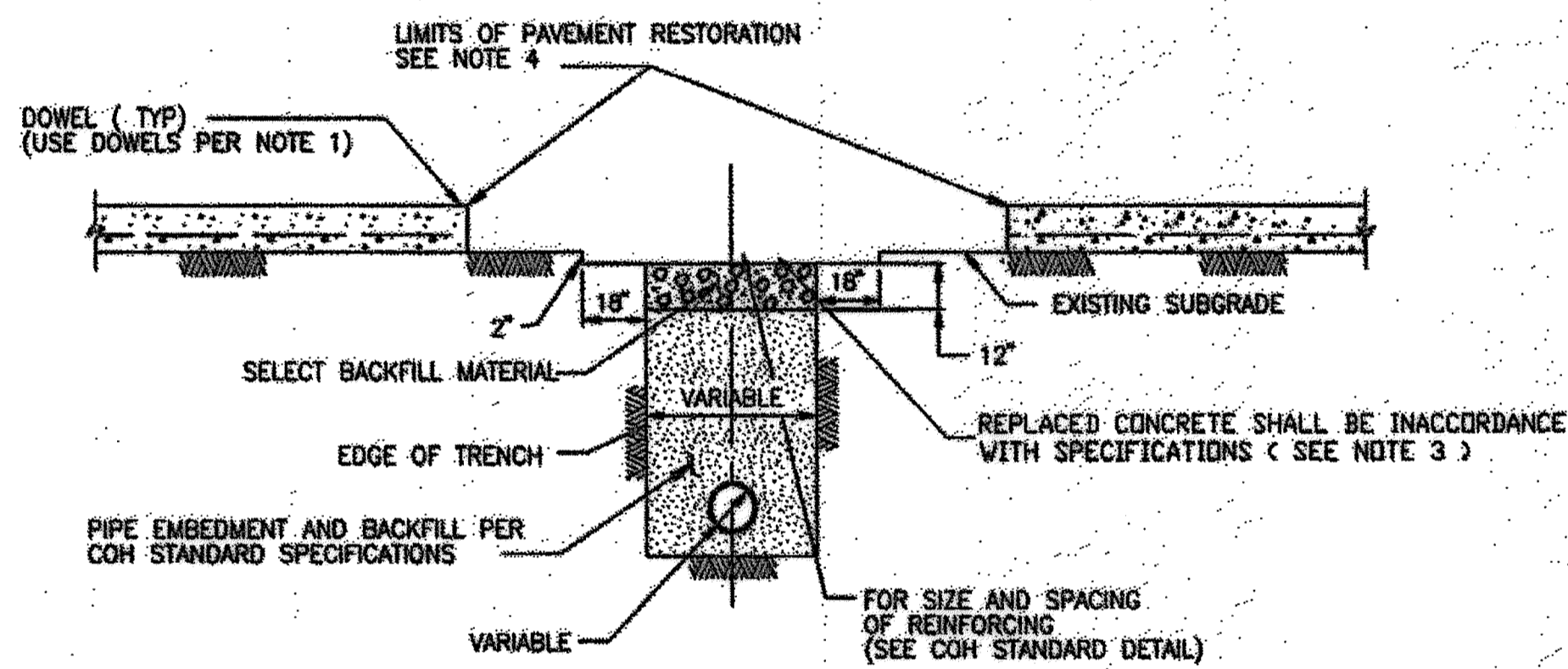
FACILITY: CITY DWG NO.







SECTION A  
REPAIR OF FLEXIBLE BASE PAVEMENT

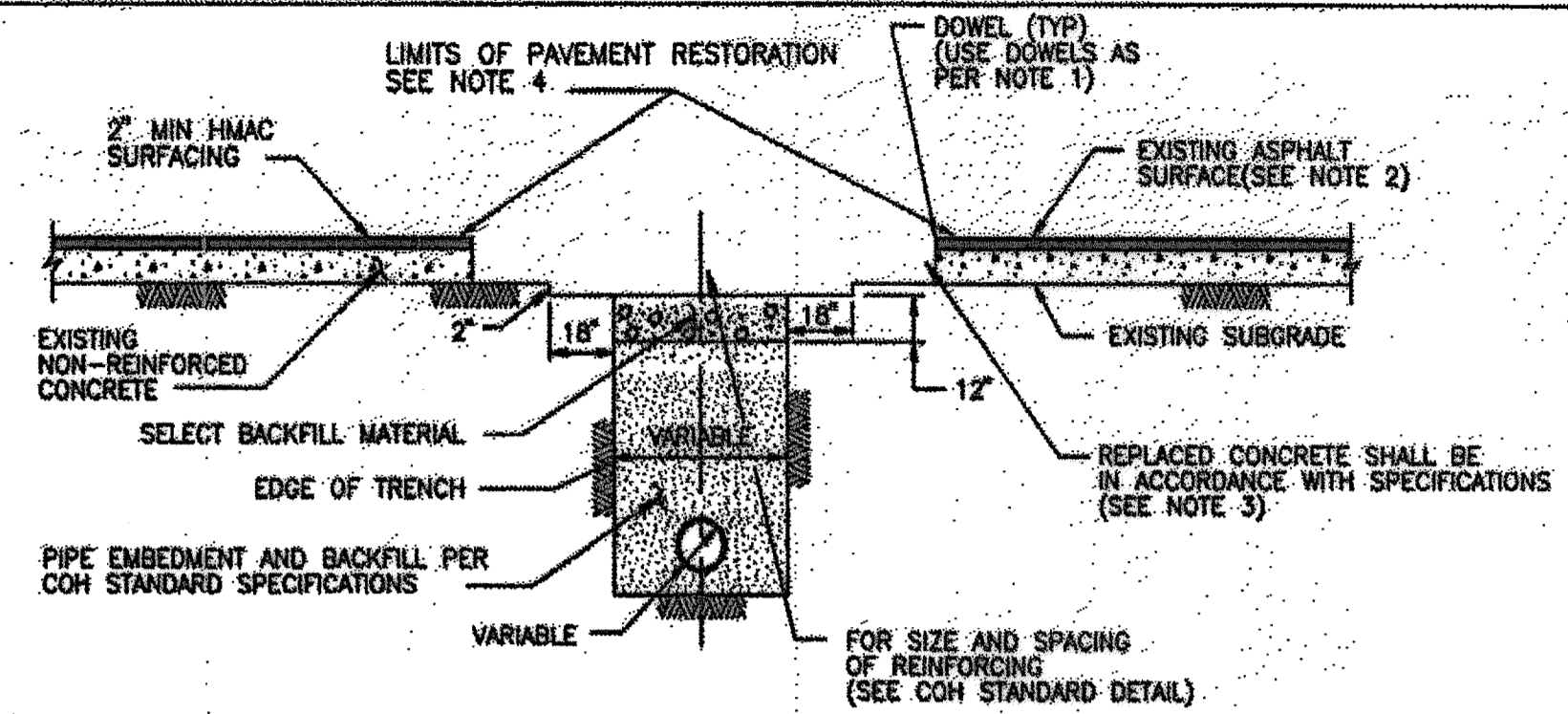


SECTION B  
REPAIR OF REINFORCED CONCRETE PAVEMENT

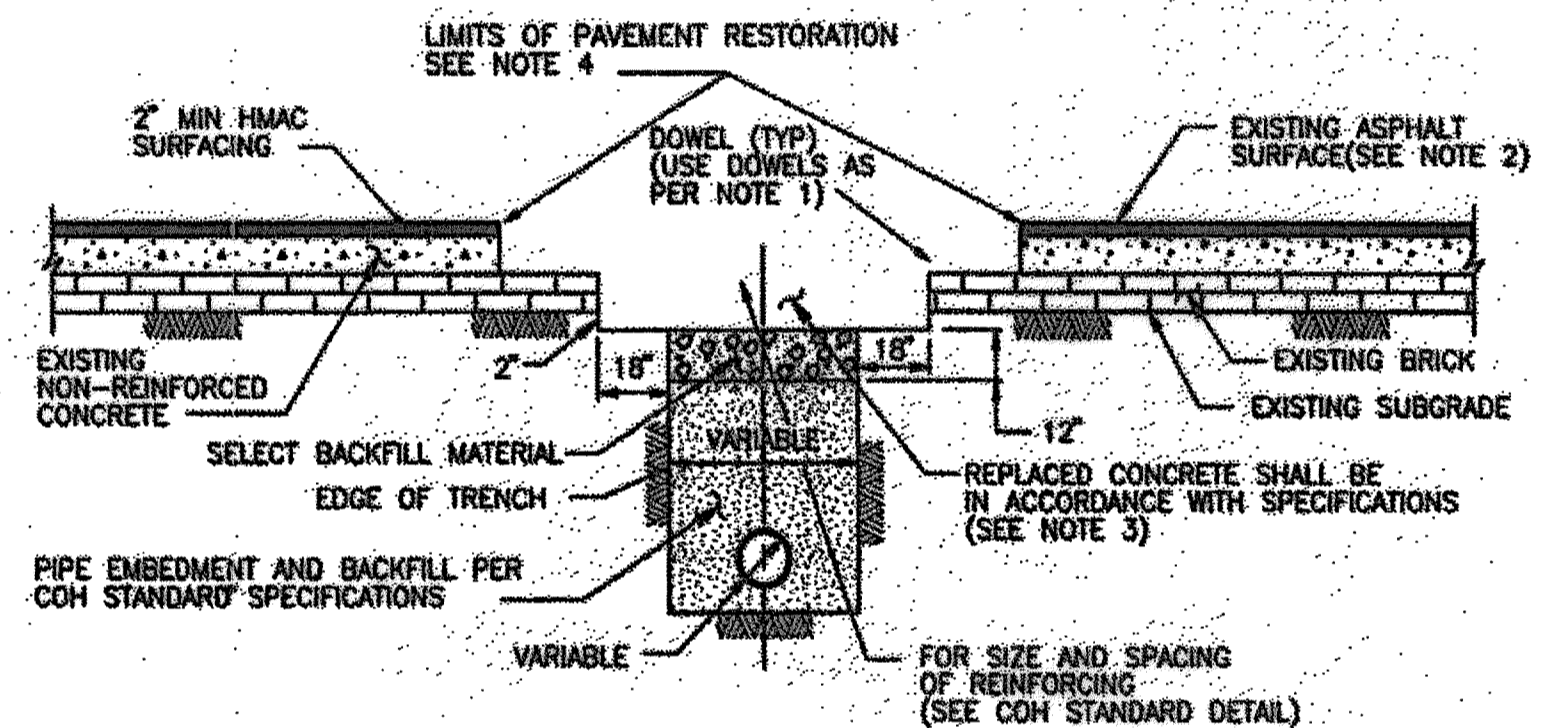
NOTE:

1. EXPOSE 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE # 6 BARS, 24" LONG, 24" C-C, DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB. WITH "PO ROC" OR EQUAL.
2. IF REINFORCED CONCRETE IS OVERLAYED WITH ASPHALT, REPLACE WITH 2" MIN HMAC SURFACING.
3. REFER TO STANDARD DETAIL 02751-01 FOR REINFORCING STEEL REQUIREMENTS.
4. REFER TO STANDARD DETAIL 02951-01 FOR PAVEMENT RESTORATION LIMITS.

<b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
<b>PAVEMENT REPAIR DETAILS FOR STREET CUTS</b> (NOT TO SCALE)	
APPROVED BY:  CITY ENGINEER	APPROVED BY:  DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02902-01



SECTION C  
REPAIR OF NON-REINFORCED CONCRETE PAVEMENT

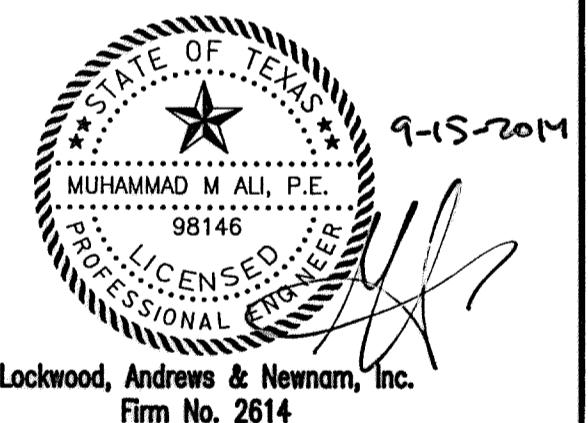


SECTION D  
REPAIR OF NON-REINFORCED CONCRETE PAVEMENT WITH BRICK

NOTE:

1. EXPOSE 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE # 6 BARS, 24" LONG, 24" C-C, DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB. WITH "PO ROC" OR EQUAL.
2. IF REINFORCED CONCRETE IS OVERLAYED REPLACE WITH SAME THICKNESS OF HMAC SURFACING.
3. REFER TO STANDARD DETAIL 02751-01 FOR REINFORCING STEEL REQUIREMENT
4. REFER TO STANDARD DETAIL 02951-01 FOR PAVEMENT RESTORATION LIMITS.

<b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
<b>PAVEMENT REPAIR DETAILS FOR STREET CUTS</b> NON REINFORCED CONCRETE AND BRICK PAVEMENT (NOT TO SCALE)	
APPROVED BY:  CITY ENGINEER	APPROVED BY:  DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02902-02



Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY



LUMPKIN ROAD  
N-T17000-0012-3

PAVEMENT REPAIR DETAILS

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

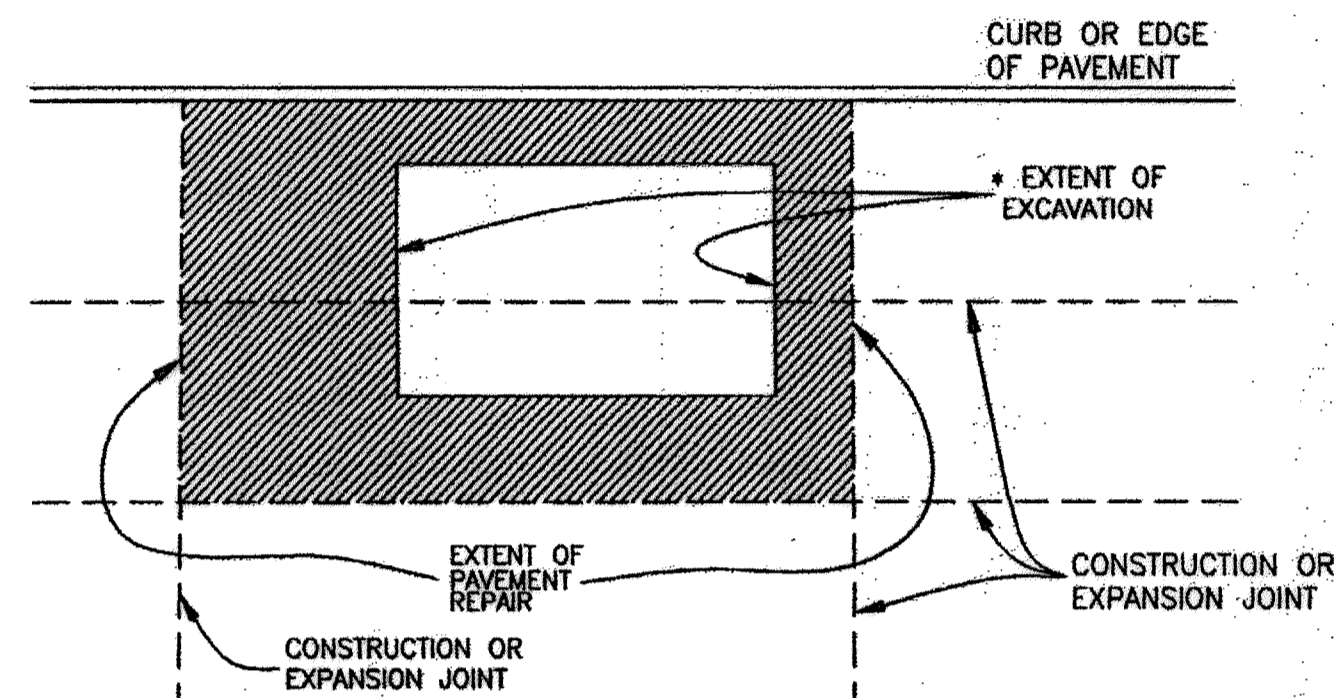
FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
NOT TO SCALE	
SHEET:	
206 OF 226	

No.	DATE	REVISIONS	APP.

No.	DATE	REVISIONS	APP.

**CONCRETE PAVEMENT RESTORATION**

AGE OF PAVEMENT  
LESS THAN OR EQUAL TO 5 YEARS



**NOTES:**

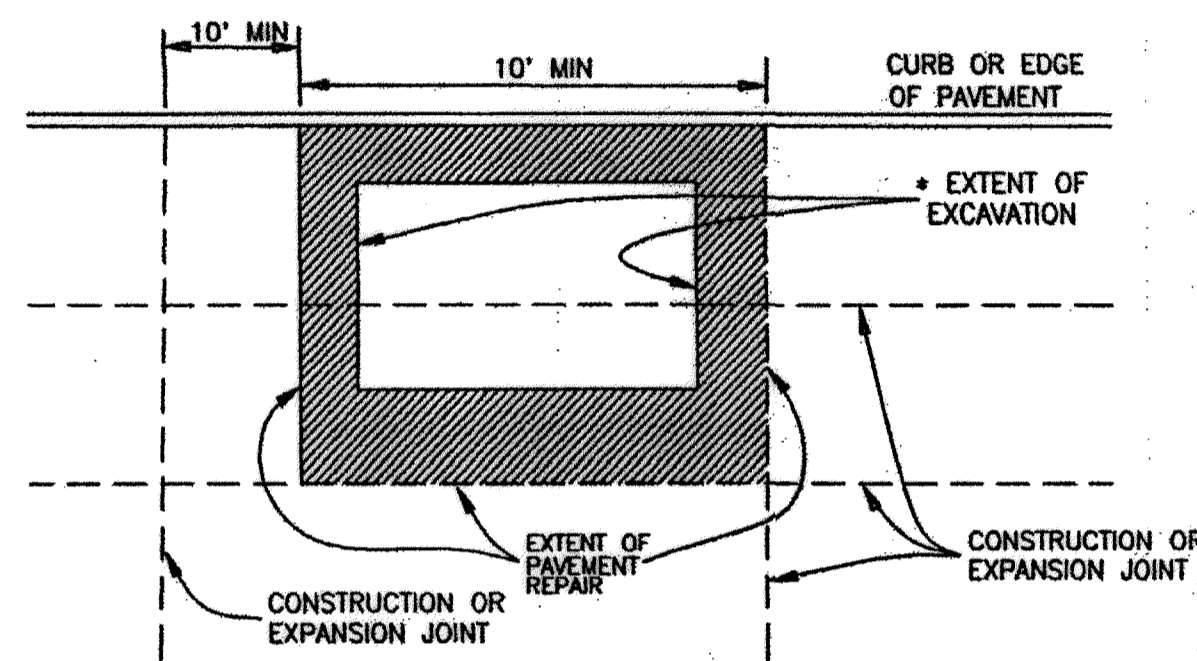
- EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
- REPLACE ENTIRE PANEL WIDTH AND LENGTH TO NEAREST CONSTRUCTION OR EXPANSION JOINT BEYOND EDGE OF EXCAVATION.
- SAW CUT AND EXPOSE 15" OF REINFORCING STEEL WITHIN EXISTING PAVEMENT. PROVIDE HORIZONTAL DOWELS (PER SPECIFICATION SECTION 02902-01) IF EXISTING REINFORCING IS BROKEN OFF.
- REPLACE CURB WHEN ADJACENT LANE IS REPLACED.
- MAINTAIN EXPANSION JOINTS AT EXISTING LOCATIONS UNLESS OTHERWISE DIRECTED BY CITY ENGINEER.
- SPECIALTY PAVEMENTS (IE: BRICK PAVERS) TO BE REPLACED WITH MATCHING PAVEMENT IN ALL CASES.
- REPLACE PAVEMENT MARKINGS IN ACCORDANCE WITH CITY SPECIFICATIONS 02764 AND 02767.

\* EXTENT OF EXCAVATION INCLUDES 18" OVERCUT AS SHOWN ON STANDARD DETAIL 02902-01.

<b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE GROUP	
Street Cut Pavement Replacement CONCRETE PAVEMENT LESS THAN 5 YRS IN AGE (NOT TO SCALE)	
APPROVED BY: <i>[Signature]</i> CITY ENGINEER	APPROVED BY: <i>[Signature]</i> DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUNE 2002	DWG NO: 02951-01

**CONCRETE PAVEMENT RESTORATION**

AGE OF PAVEMENT  
GREATER THAN 5 YEARS



**NOTES:**

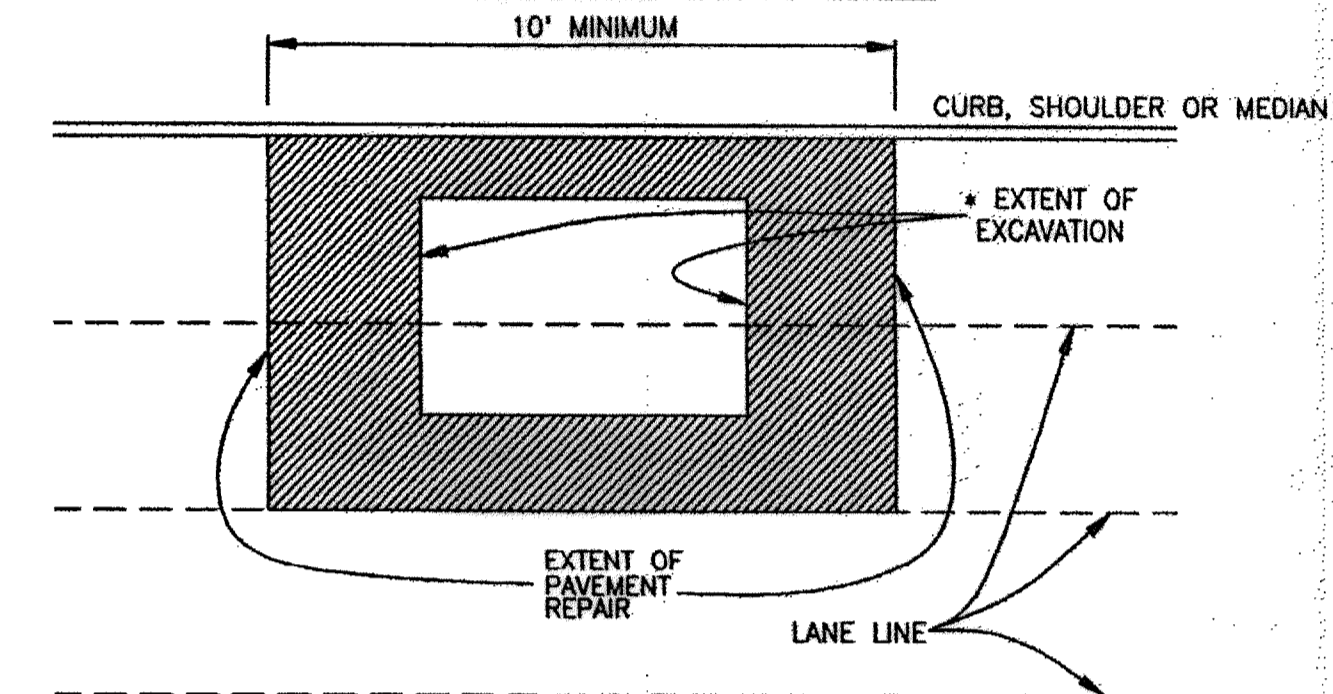
- EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
- WIDTH: REPLACE PANEL WIDTH TO NEAREST CONSTRUCTION OR EXPANSION JOINT BEYOND EDGE OF EXCAVATION.
- LENGTH:
  - MINIMUM LENGTH OF PAVEMENT REPAIR ALONG TRAVEL WAY IS 10' FROM THE NEAREST JOINT.
  - IF EDGE OF EXCAVATION IS LESS THAN 10' FROM EXISTING CONSTRUCTION OR EXPANSION JOINT, REPLACE PAVEMENT TO EXISTING JOINT.
- SAW CUT AND EXPOSE 15" OF REINFORCING STEEL AROUND EDGE OF PANEL REPLACEMENT. PROVIDE HORIZONTAL DOWELS (PER SPECIFICATION SECTION 02902-01) IF REINFORCING IS BROKEN OFF OR DOES NOT EXIST.
- REPLACE CURB WHEN ADJACENT LANE IS REPLACED.
- MAINTAIN EXPANSION JOINTS AT EXISTING LOCATIONS UNLESS OTHERWISE DIRECTED BY CITY ENGINEER.
- SPECIALTY PAVEMENTS (IE: BRICK PAVERS) TO BE REPLACED WITH MATCHING PAVEMENT IN ALL CASES.
- REPLACE PAVEMENT MARKINGS IN ACCORDANCE WITH CITY SPECIFICATIONS 02764 AND 02767.

\* EXTENT OF EXCAVATION INCLUDES 18" OVERCUT AS SHOWN ON STANDARD DETAIL 02902-01.

<b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE GROUP	
Street Cut Pavement Replacement CONCRETE PAVEMENT OVER 5 YRS IN AGE (NOT TO SCALE)	
APPROVED BY: <i>[Signature]</i> CITY ENGINEER	APPROVED BY: <i>[Signature]</i> DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUNE 2002	DWG NO: 02951-02

**ASPHALT PAVEMENT RESTORATION**

FOR PAVEMENT OF ALL AGES

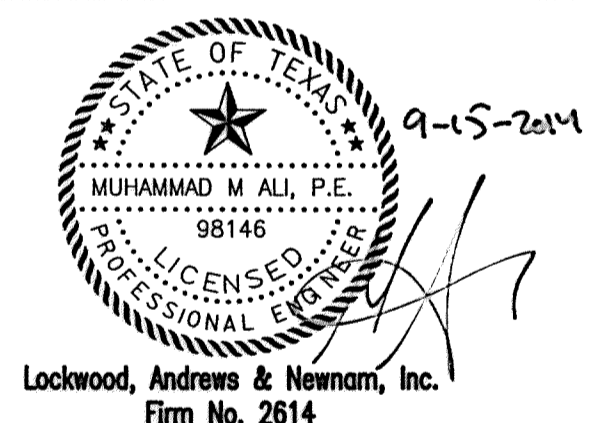


**NOTES:**

- EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
  - FLEXIBLE BASE:** REPLACE BASE TO SAME THICKNESS PLUS TWO INCHES (2") FOR EXTENT OF EXCAVATION. USE APPROVED BASE MATERIAL TYPE. \*
  - SURFACE COURSE:**
    - WIDTH: SURFACE MILL AND OVERLAY FULL WIDTH OF LANE(S) TO NEAREST LANE DIVIDER BEYOND EDGE OF EXCAVATION.
    - LENGTH: MINIMUM LENGTH OF SURFACE MILL ALONG TRAVEL WAY IS 10'.
    - REPLACE PAVEMENT MARKINGS IN ACCORDANCE WITH CITY SPECIFICATIONS 02764 & 02767.
- ADDITIONAL REQUIREMENTS FOR ASPHALT OVERLAY ON CONCRETE PAVEMENT:**
- REPLACE CONCRETE FOR EXTENT OF EXCAVATION. REPLACE TO SAME THICKNESS PLUS TWO INCHES (2").
  - WIDTH: IF EXCAVATION EXTENDS MORE THAN HALF OF A LANE, REPLACE ENTIRE LANE OF CONCRETE. OTHERWISE USE STANDARD DETAIL 02902-01.
  - SAW CUT AND EXPOSE 15" OF REINFORCING STEEL AROUND EDGE OF CONCRETE REPLACEMENT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS PER SPECIFICATION SECTION 02902.
  - REPLACE CURB WHEN ADJACENT LANE IS REPLACED.
  - MAINTAIN CONCRETE EXPANSION JOINTS AT EXISTING LOCATIONS UNLESS OTHERWISE APPROVED BY CITY ENGINEER.

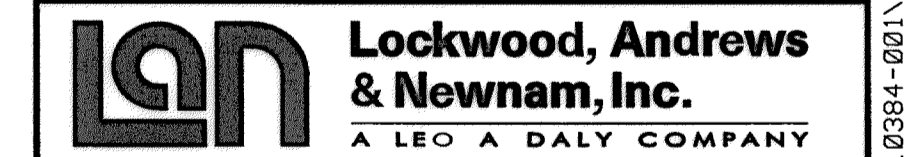
\* EXTENT OF EXCAVATION INCLUDES 18" OVERCUT AS SHOWN ON STANDARD DETAIL 02902-01.

<b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE GROUP	
Street Cut Pavement Replacement ASPHALT PAVEMENT FOR PAVEMENT OF ALL AGES (NOT TO SCALE)	
APPROVED BY: <i>[Signature]</i> CITY ENGINEER	APPROVED BY: <i>[Signature]</i> DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUNE 2002	DWG NO: 02951-03



Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**



LUMPKIN ROAD  
N-T17000-0012-3

STREET CUT DETAILS

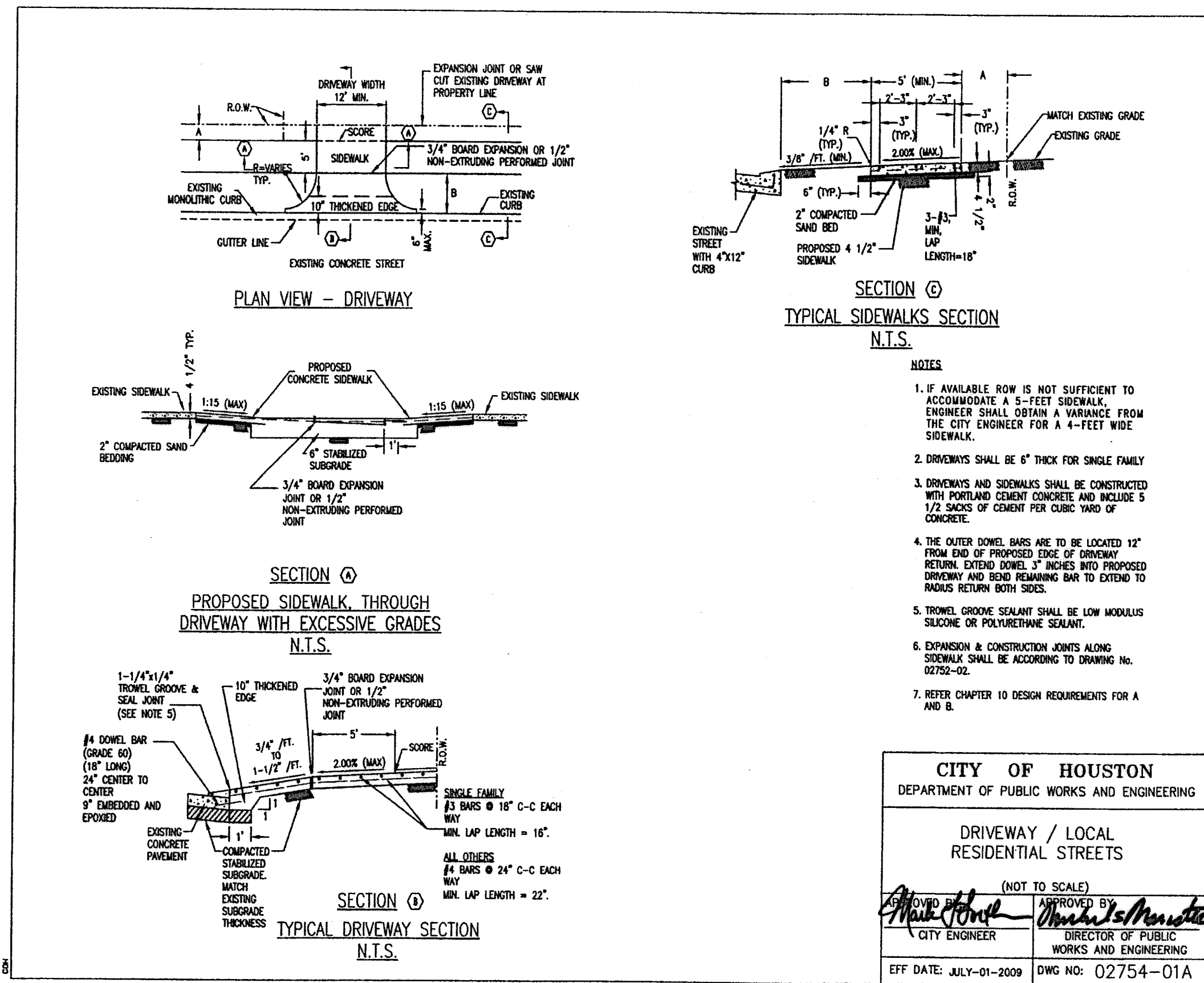
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SW

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
NOT TO SCALE	
SHEET:	
207 OF 226	







**SECTION C**  
TYPICAL SIDEWALK SECTION  
N.T.S.

**NOTES**

1. IF AVAILABLE ROW IS NOT SUFFICIENT TO ACCOMMODATE A 5-FOOT SIDEWALK, ENGINEER SHALL OBTAIN A VARIANCE FROM THE CITY ENGINEER FOR A 4-FOOT WIDE SIDEWALK.
2. DRIVEWAYS SHALL BE 6" THICK FOR SINGLE FAMILY.
3. DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE AND INCLUDE 5 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
4. THE OUTER DOWEL BARS ARE TO BE LOCATED 12" FROM END OF PROPOSED EDGE OF DRIVEWAY RETURN EXTEND DOWEL 17 INCHES INTO PROPOSED DRIVEWAY AND BEND REMAINING BAR TO EXTEND TO RADUS RETURN BOTH SIDES.
5. TROWEL GROOVE SEALANT SHALL BE LOW MODULUS SILICONE OR POLYURETHANE SEALANT.
6. EXPANSION & CONSTRUCTION JOINTS ALONG SIDEWALK SHALL BE ACCORDING TO DRAWING NO. 02752-02.
7. REFER CHAPTER 10 DESIGN REQUIREMENTS FOR A AND B.

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

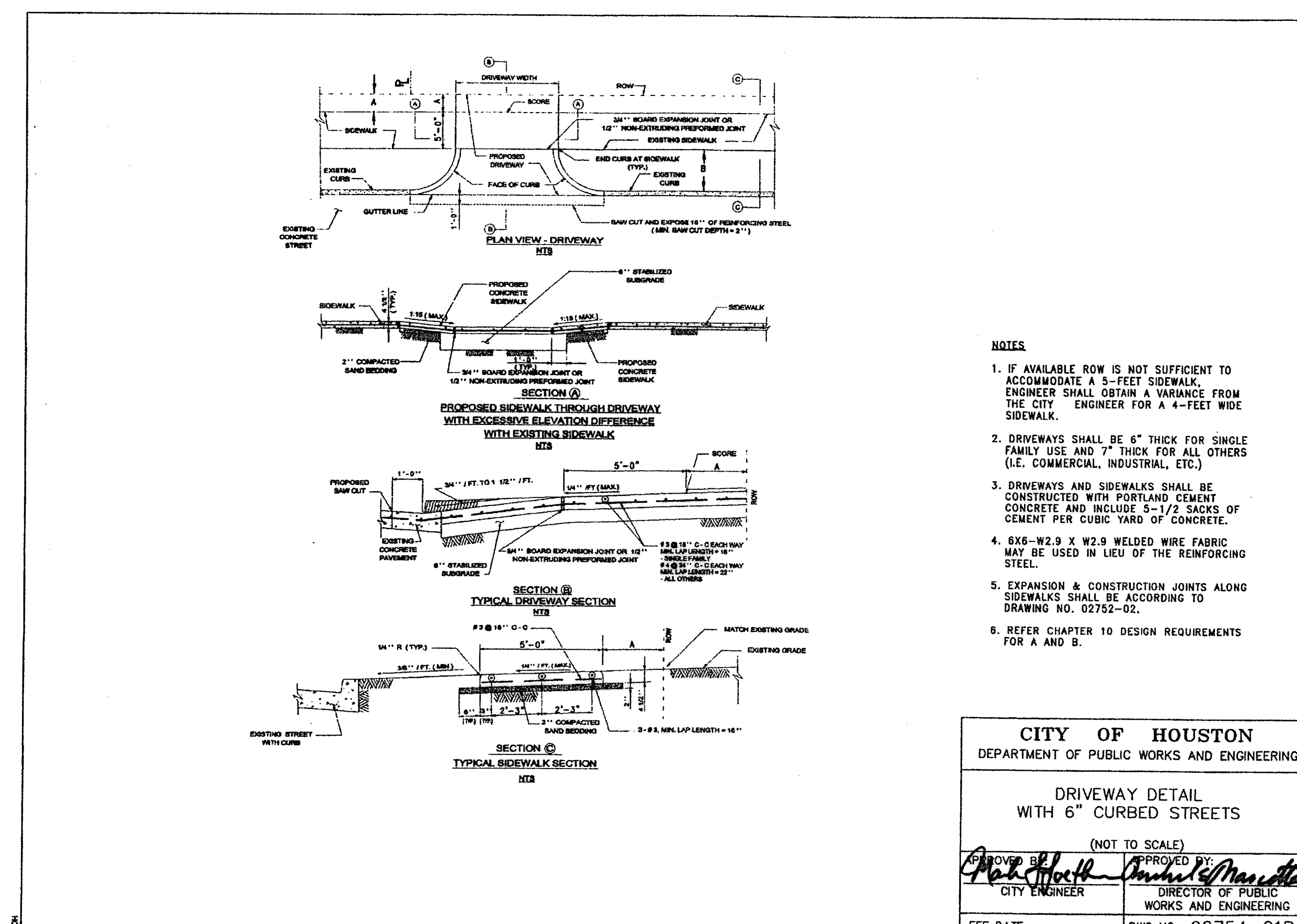
DRIVEWAY / LOCAL RESIDENTIAL STREETS

(NOT TO SCALE)

APPROVED BY: *Muhammad M. Ali*  
CITY ENGINEER

APPROVED BY: *Muhammad M. Ali*  
DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JULY-01-2009 DWG NO: 02754-01A



**NOTES**

1. IF AVAILABLE ROW IS NOT SUFFICIENT TO ACCOMMODATE A 5-FOOT SIDEWALK, ENGINEER SHALL OBTAIN A VARIANCE FROM THE CITY ENGINEER FOR A 4-FOOT WIDE SIDEWALK.
2. DRIVEWAYS SHALL BE 6" THICK FOR SINGLE FAMILY USE AND 7" THICK FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)
3. DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE AND INCLUDE 5-1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
4. 6X6-W2.9 X W2.9 WELDED WIRE FABRIC MAY BE USED IN LIEU OF THE REINFORCING STEEL.
5. EXPANSION & CONSTRUCTION JOINTS ALONG SIDEWALKS SHALL BE ACCORDING TO DRAWING NO. 02752-02.
6. REFER CHAPTER 10 DESIGN REQUIREMENTS FOR A AND B.

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

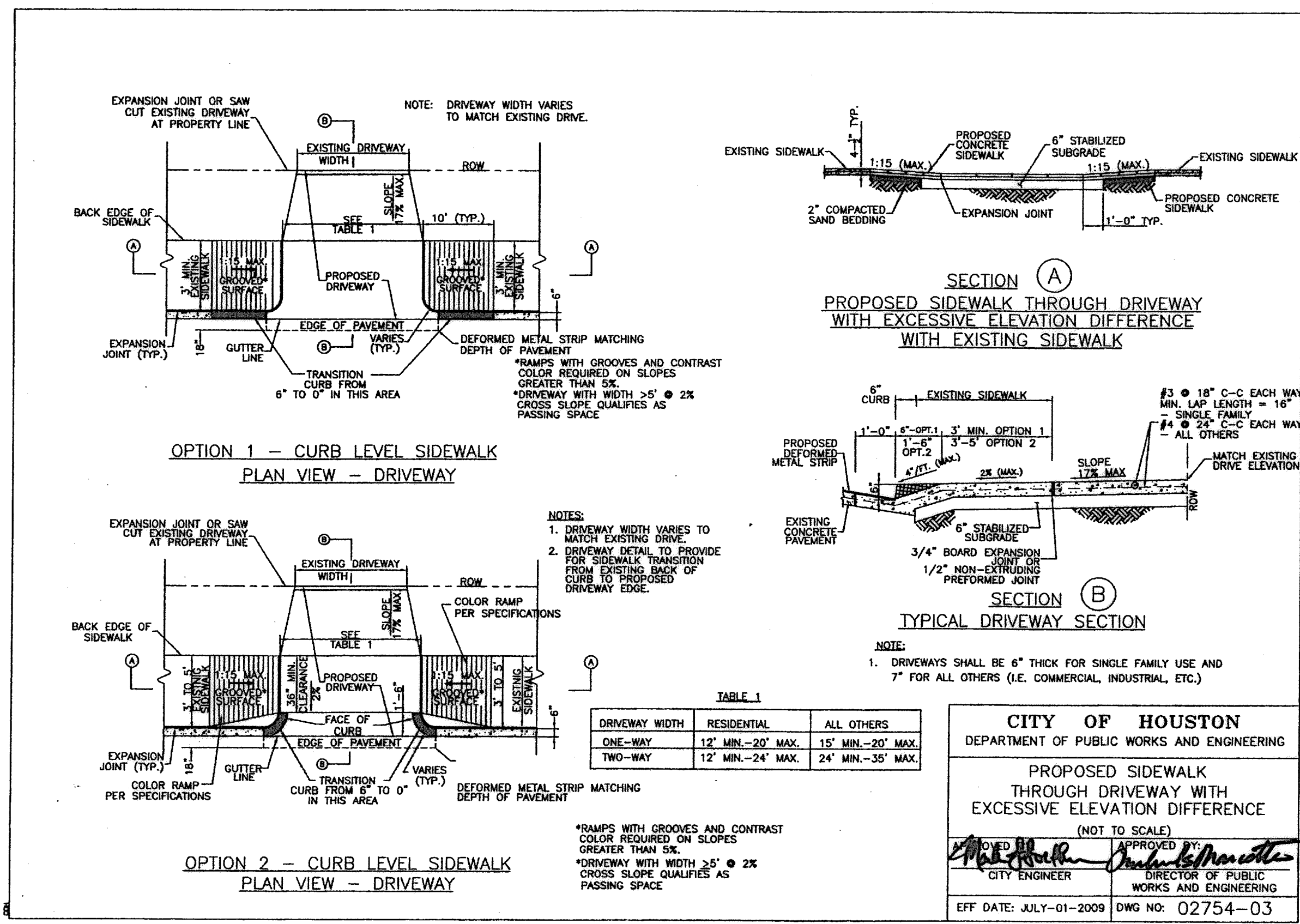
DRIVEWAY DETAIL WITH 6" CURBED STREETS

(NOT TO SCALE)

APPROVED BY: *Muhammad M. Ali*  
CITY ENGINEER

APPROVED BY: *Muhammad M. Ali*  
DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JULY-01-2009 DWG NO: 02754-01B



**SECTION A**  
PROPOSED SIDEWALK THROUGH DRIVEWAY WITH EXCESSIVE ELEVATION DIFFERENCE WITH EXISTING SIDEWALK

**SECTION B**  
TYPICAL DRIVEWAY SECTION

**NOTES**

1. DRIVEWAYS SHALL BE 6" THICK FOR SINGLE FAMILY USE AND 7" FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

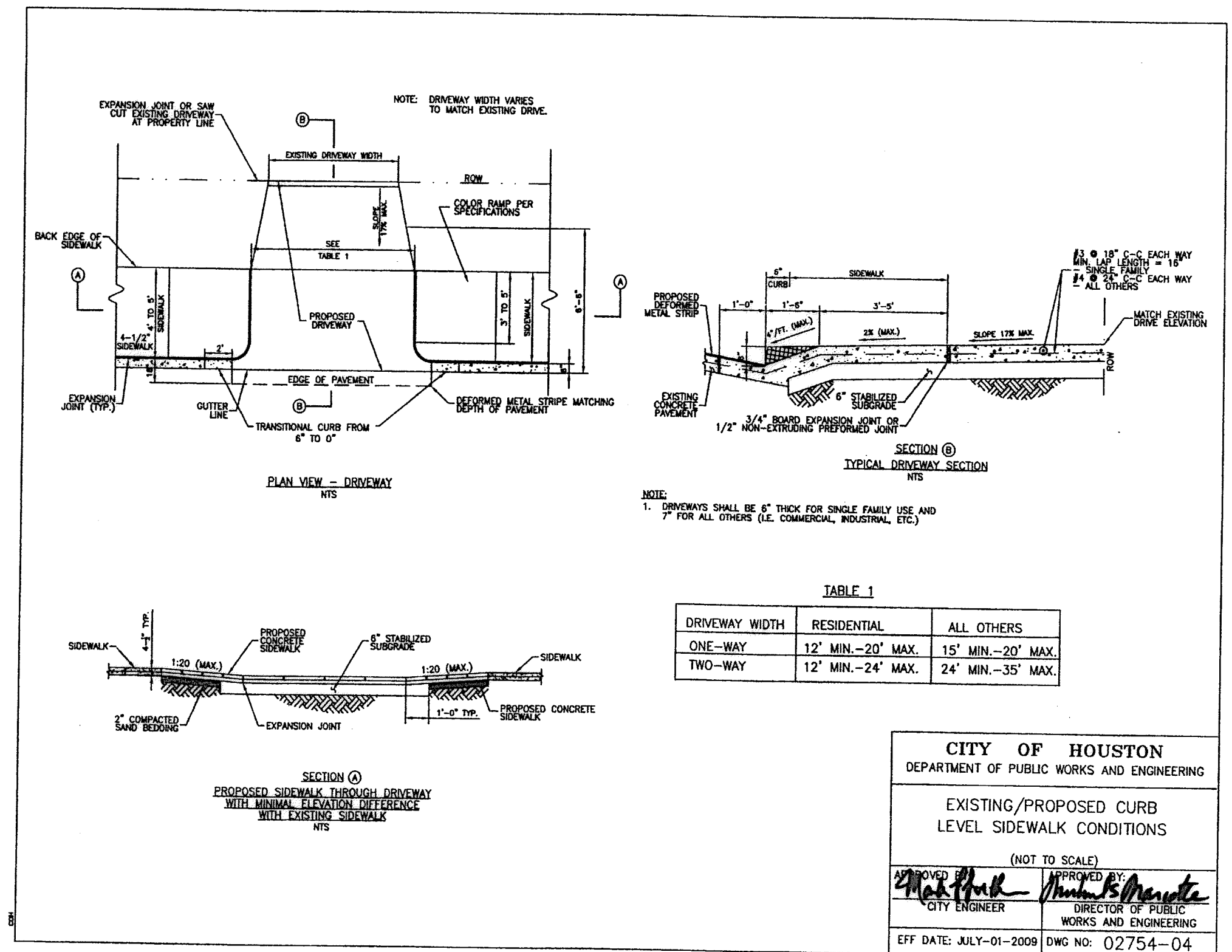
PROPOSED SIDEWALK THROUGH DRIVEWAY WITH EXCESSIVE ELEVATION DIFFERENCE

(NOT TO SCALE)

APPROVED BY: *Muhammad M. Ali*  
CITY ENGINEER

APPROVED BY: *Muhammad M. Ali*  
DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JULY-01-2009 DWG NO: 02754-03



**TABLE 1**

DRIVEWAY WIDTH	RESIDENTIAL	ALL OTHERS
ONE-WAY	12' MIN.-20' MAX.	15' MIN.-20' MAX.
TWO-WAY	12' MIN.-24' MAX.	24' MIN.-35' MAX.

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

EXISTING/PROPOSED CURB LEVEL SIDEWALK CONDITIONS

(NOT TO SCALE)

APPROVED BY: *Muhammad M. Ali*  
CITY ENGINEER

APPROVED BY: *Muhammad M. Ali*  
DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JULY-01-2009 DWG NO: 02754-04

9-15-2014

Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 CONCRETE SIDEWALK AND DRIVEWAY DETAILS  
 SHEET 2 OF 2

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

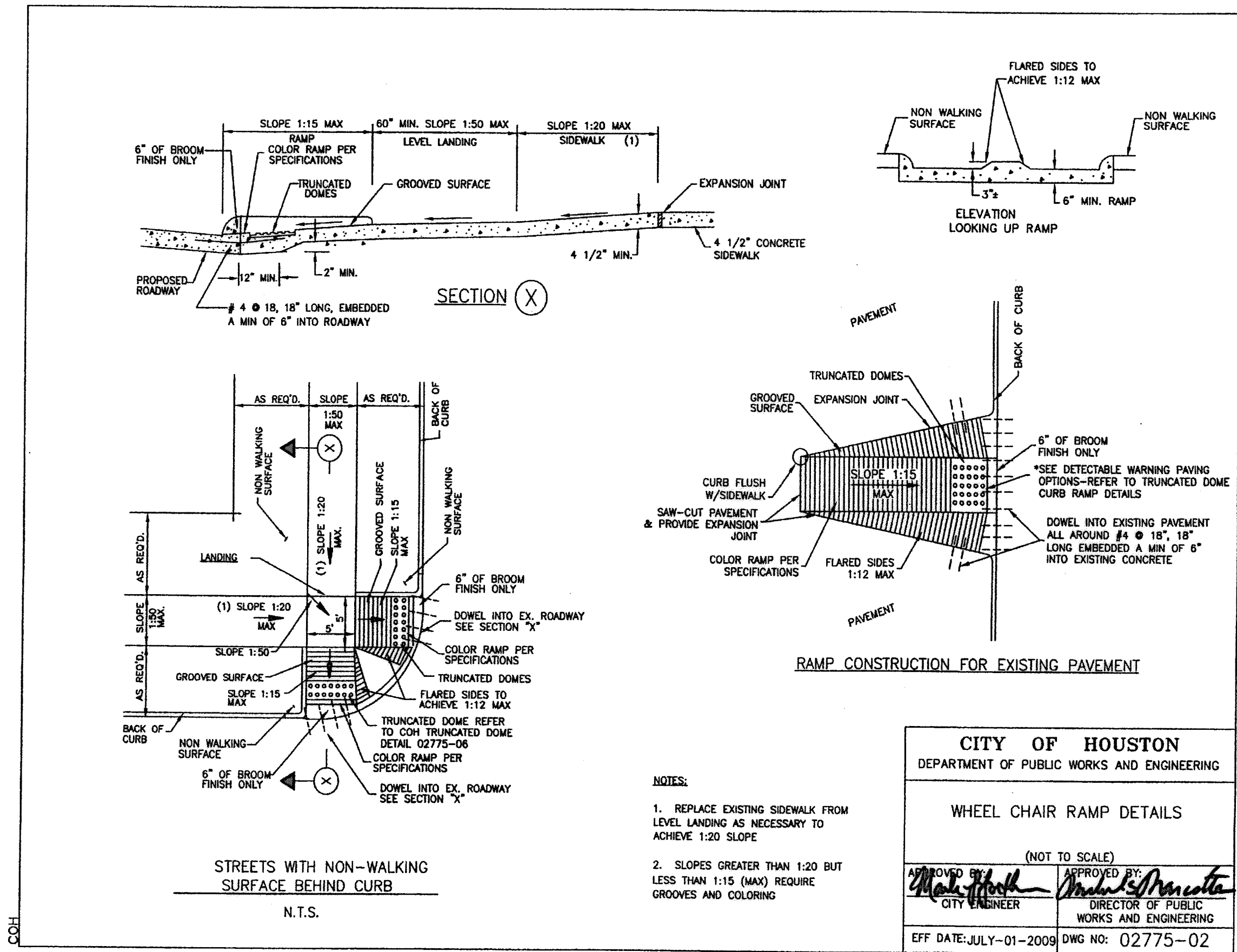
FILE NO. : \_\_\_\_\_ FACILITY \_\_\_\_\_

DRAWING SCALE: \_\_\_\_\_ CITY DWG NO. \_\_\_\_\_

NOT TO SCALE

SHEET: 209 OF 226

APP: \_\_\_\_\_  
 REVISIONS: \_\_\_\_\_  
 No. DATE: \_\_\_\_\_  
 p:\pww\ladco.intl\projectwise\Documents\Projects\130-102384-001-4-0-Production\4-01-Drawings\Roadway\Standard Detail\183-001-Concrete\SideWalk and Driveway\Standard Detail.dwg



**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

**WHEEL CHAIR RAMP DETAILS**

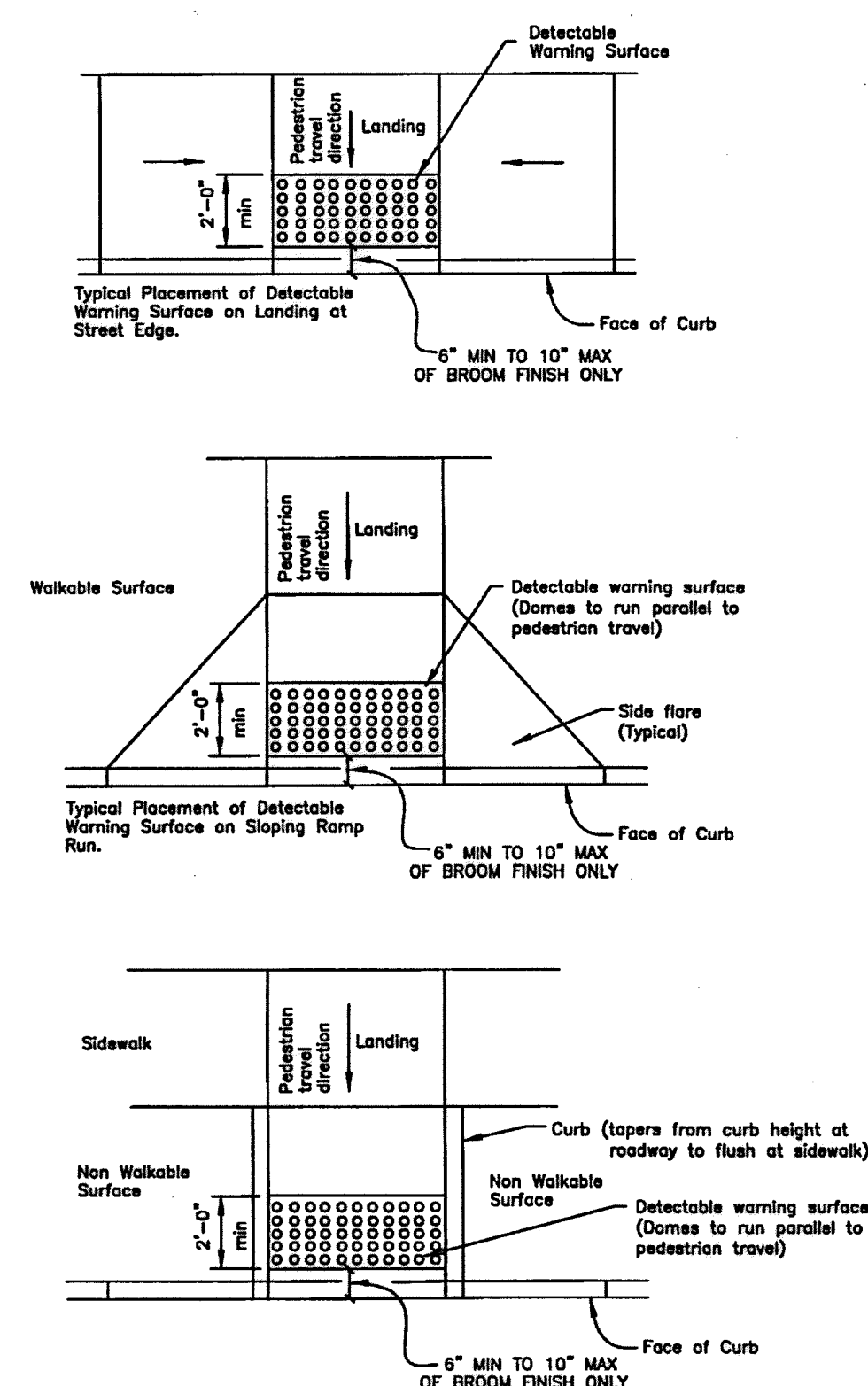
(NOT TO SCALE)

APPROVED BY: *[Signature]*  
 CITY ENGINEER

APPROVED BY: *[Signature]*  
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF. DATE: JULY-01-2009 DWG NO: 02775-02

- NOTES:
1. REPLACE EXISTING SIDEWALK FROM LEVEL LANDING AS NECESSARY TO ACHIEVE 1:20 SLOPE.
  2. SLOPES GREATER THAN 1:20 BUT LESS THAN 1:15 (MAX) REQUIRE GROOVES AND COLORING.



- GENERAL NOTES FOR DETECTABLE WARNINGS**
1. CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES. THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACE, INCLUDING SIDE FLARES. FURNISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
  2. DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
  3. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
  4. OMIT
  5. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
  6. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6" MIN TO 10" MAX FROM THE EXTENSION OF THE FACE OF CURB. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADII.
  7. REFERENCE CURB RAMP DETAILS FOR RAMP GROOVED SURFACE.

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

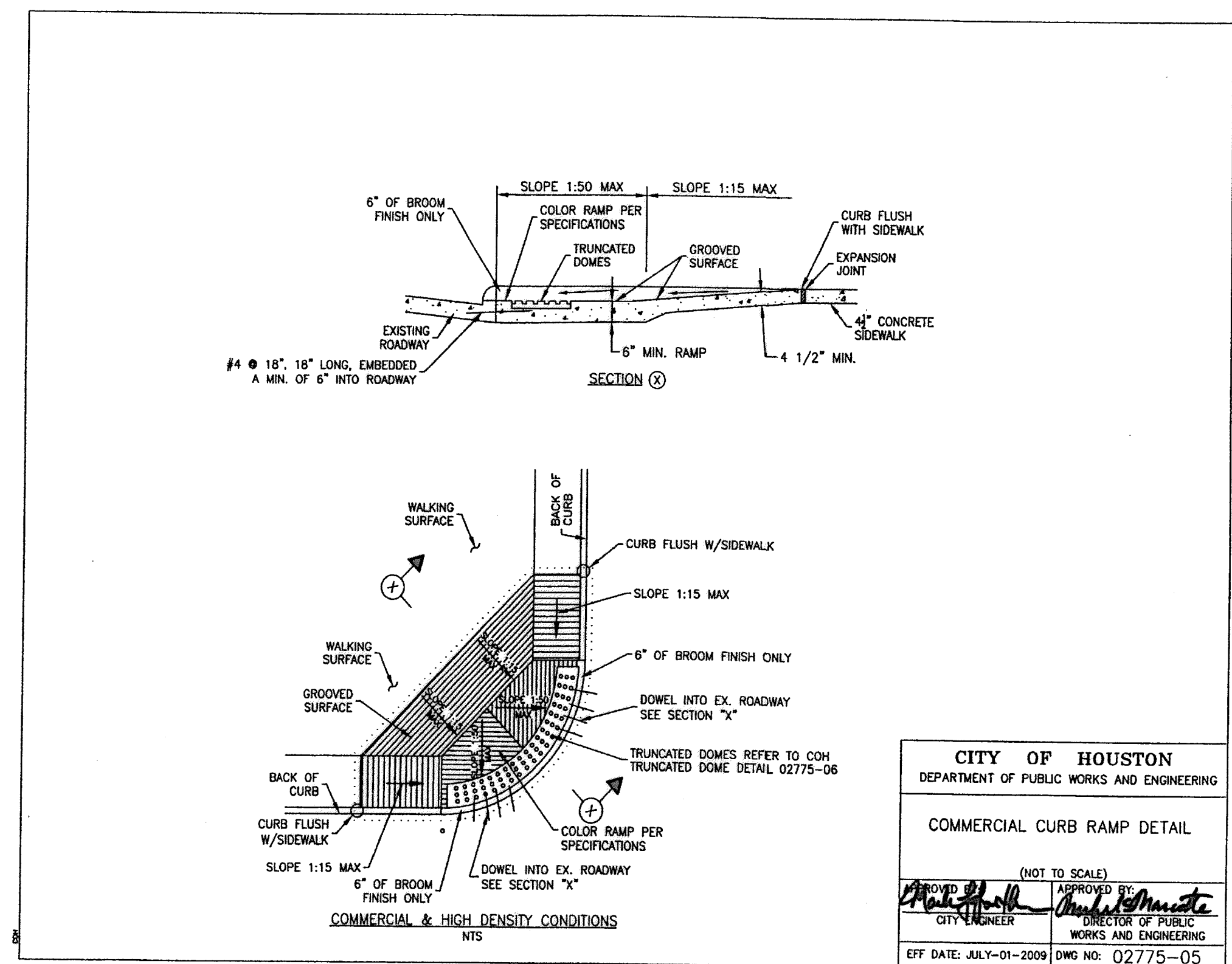
**DETECTABLE WARNING CURB RAMP DETAILS**

(NOT TO SCALE)

APPROVED BY: *[Signature]*  
 CITY ENGINEER

APPROVED BY: *[Signature]*  
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF. DATE: JULY-01-2012 DWG NO: 02775-06



**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

**COMMERCIAL CURB RAMP DETAIL**

(NOT TO SCALE)

APPROVED BY: *[Signature]*  
 CITY ENGINEER

APPROVED BY: *[Signature]*  
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF. DATE: JULY-01-2009 DWG NO: 02775-05

Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

**LUMPKIN ROAD**  
 N-T17000-0012-3

**WHEELCHAIR RAMP DETAILS**

**SHEET 1 OF 2**

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

FILE NO.:

DRAWING SCALE:

NOT TO SCALE

SHEET: 210 OF 226

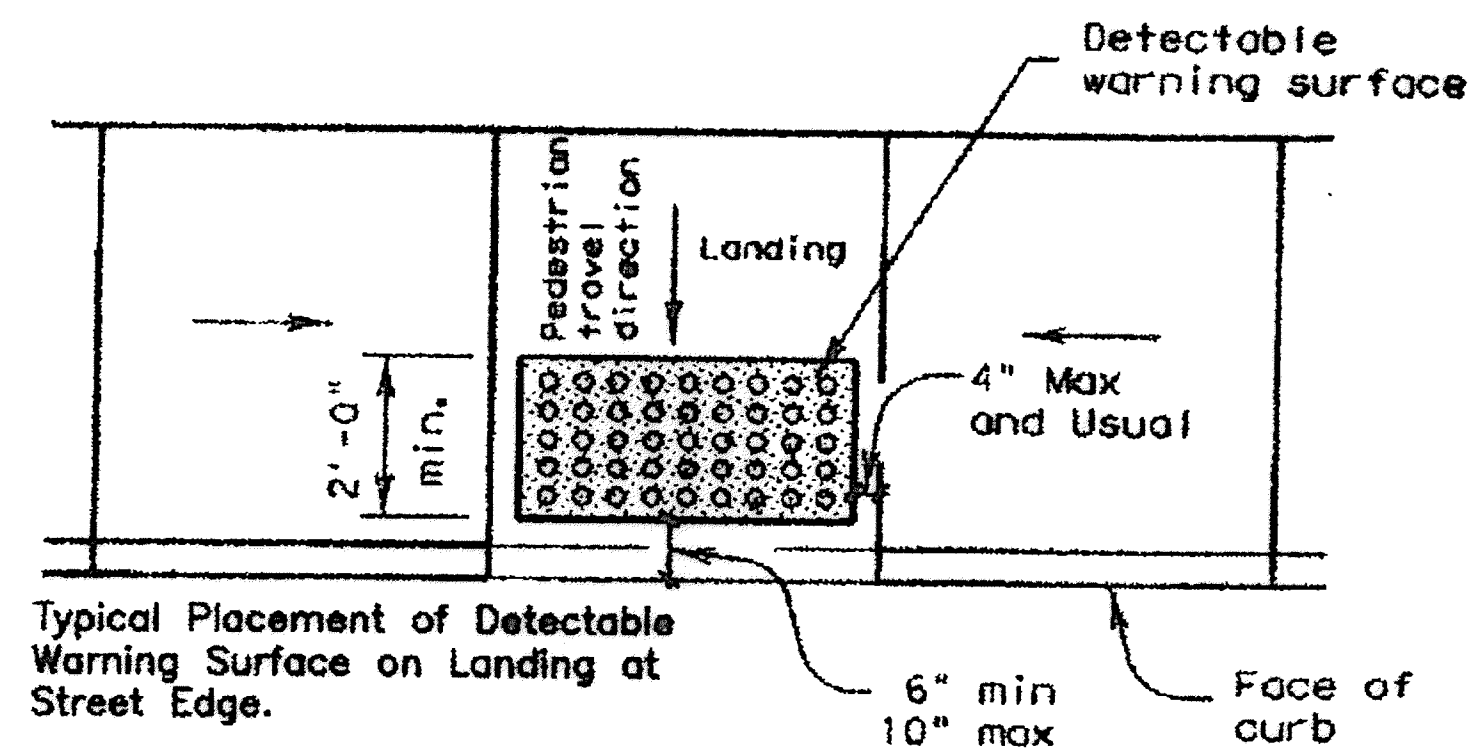
FACILITY: CITY DWG NO.

COH

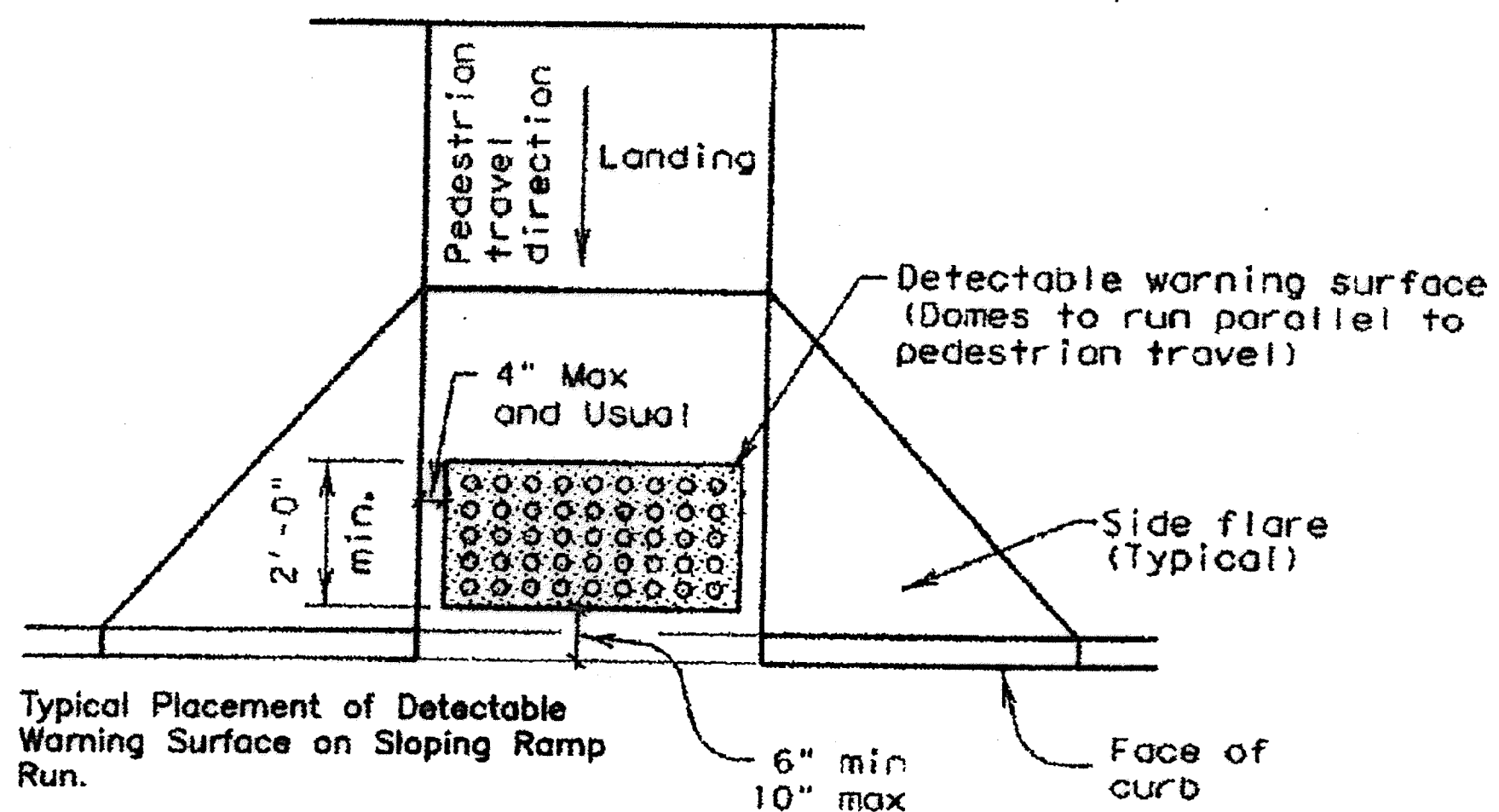
8

APP. REVISIONS No. DATE No. DATE  
 MUGuthrie  
 p:\l\ladpw\_ladco\_intl\projectwise\Documents\Projects\130-10384-001\4-0-Production\4-01-Drawings\Roadway\Standard Detail\15160F.42 PW

No.	DATE	REVISIONS	APP.



Typical Placement of Detectable Warning Surface on Landing at Street Edge.



Typical Placement of Detectable Warning Surface on Sloping Ramp Run.

### GENERAL NOTES FOR DETECTABLE WARNINGS

1. CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 4.29 OF THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACE, INCLUDING SIDE FLOORS. FURNISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
2. DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
3. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
4. OMIT
5. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
6. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS A MINIMUM OF 6" AND A MAXIMUM OF 10" FROM THE EXTENSION OF THE FACE OF CURB. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.
7. REFERENCE CURB RAMP DETAILS FOR RAMP GROOVED SURFACE.

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

**DETECTABLE WARNING CURB RAMP DETAILS**

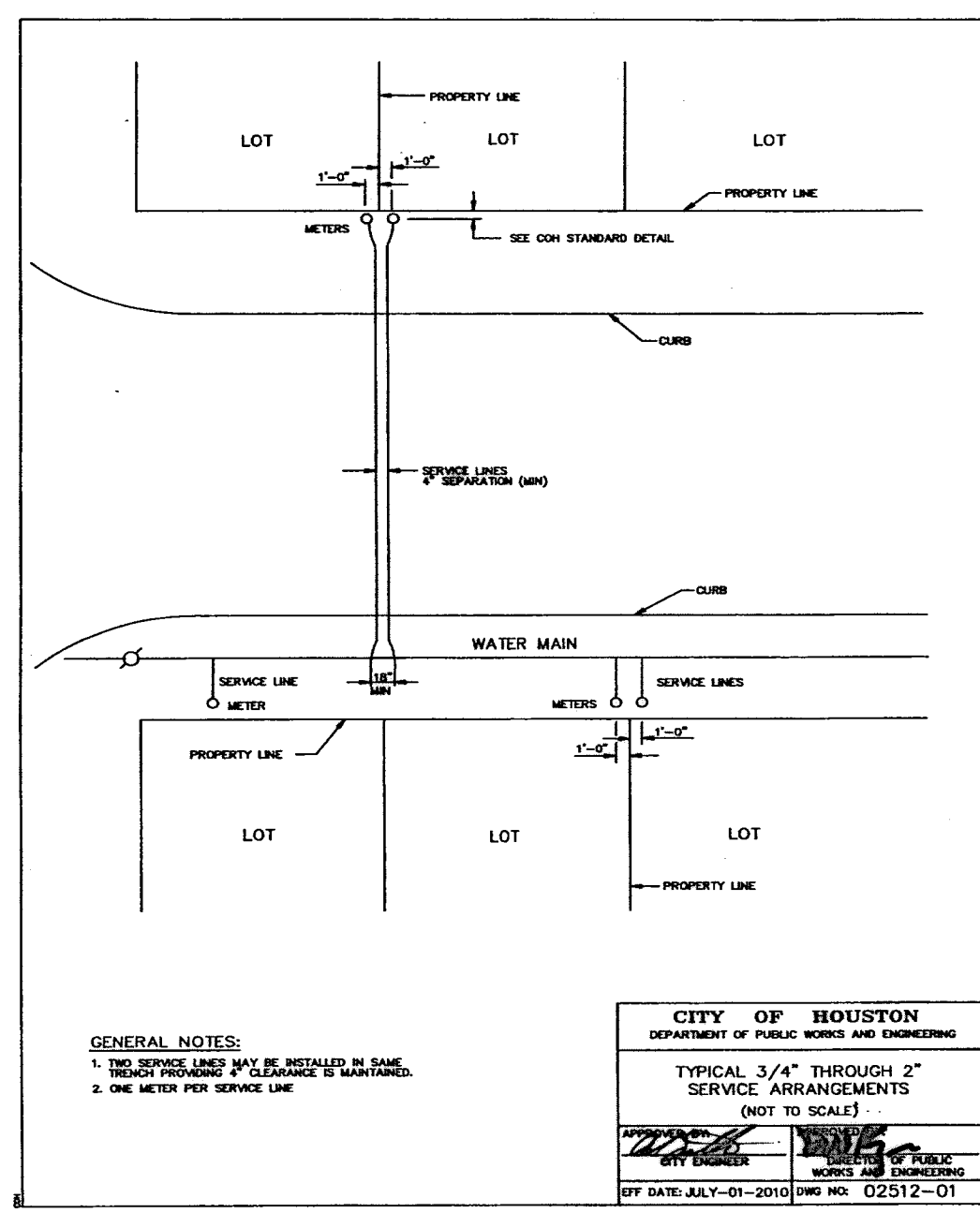
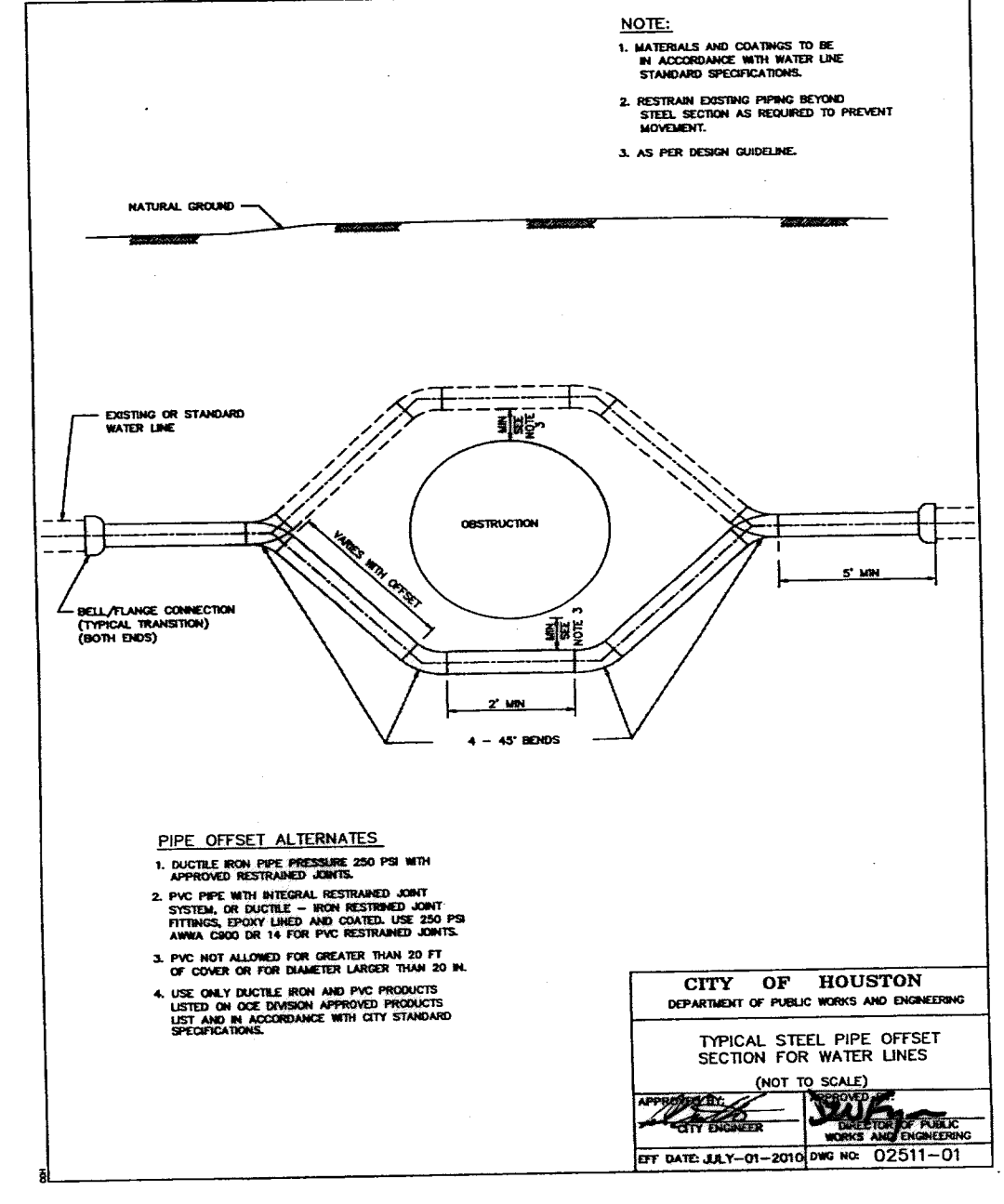
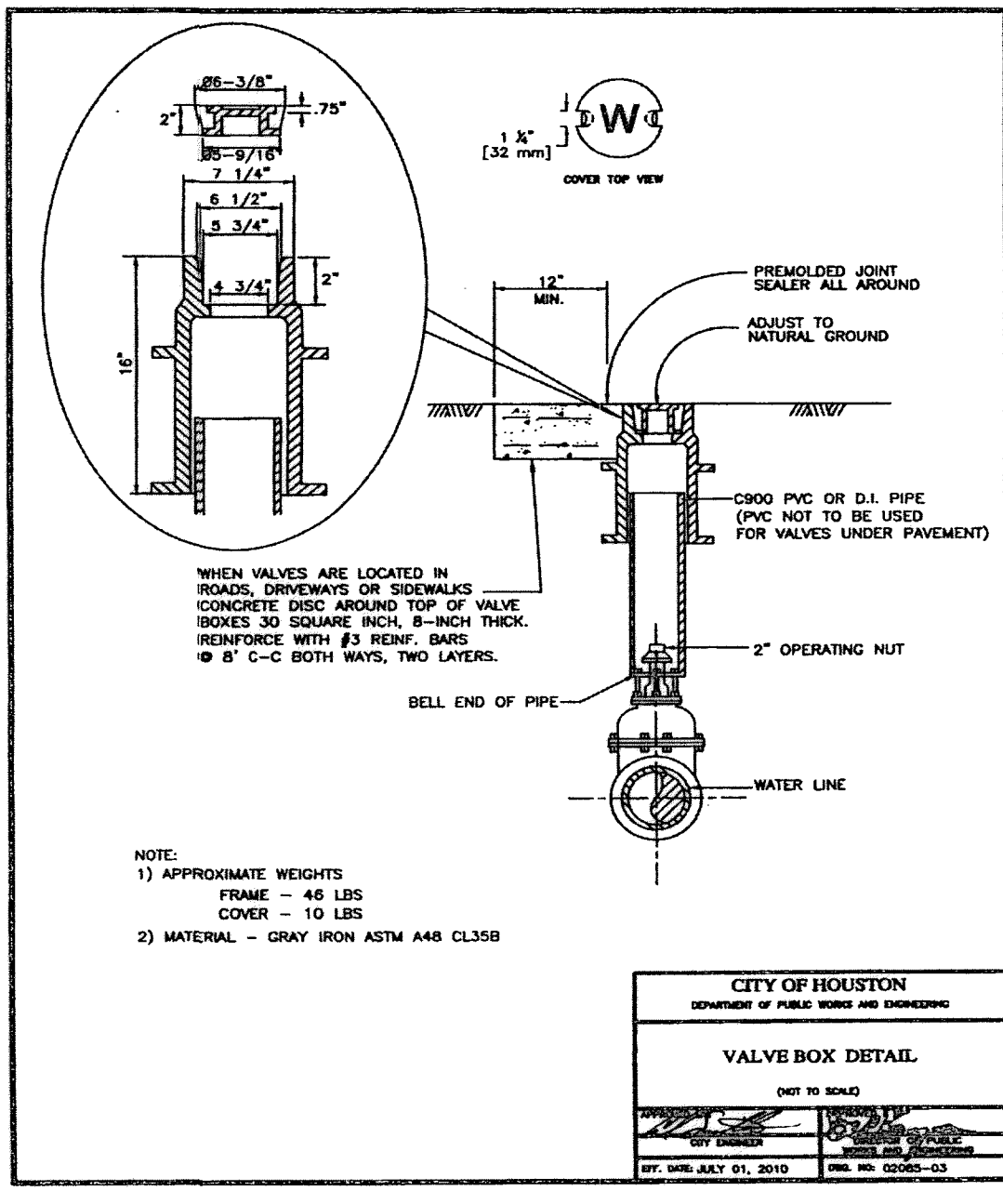
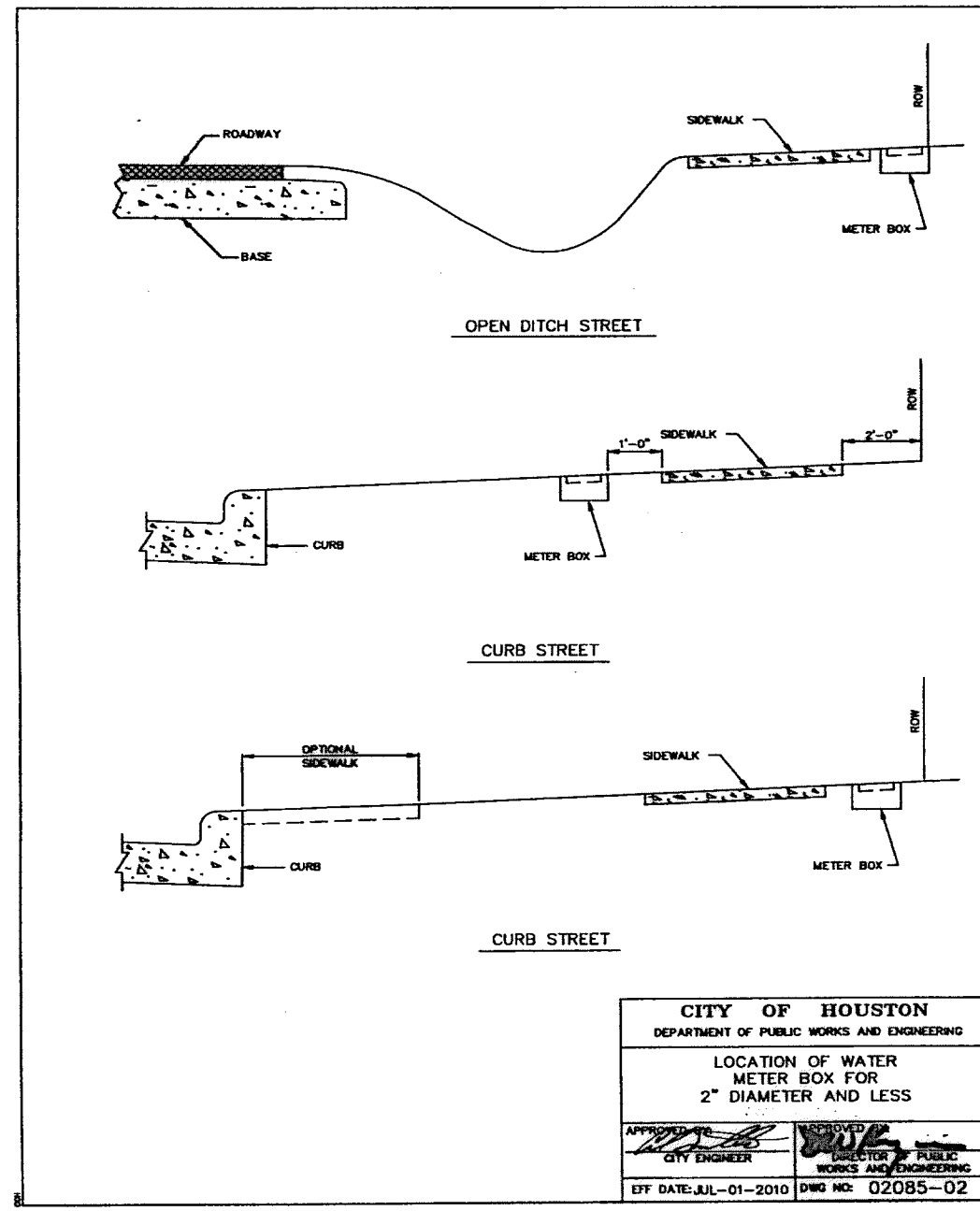
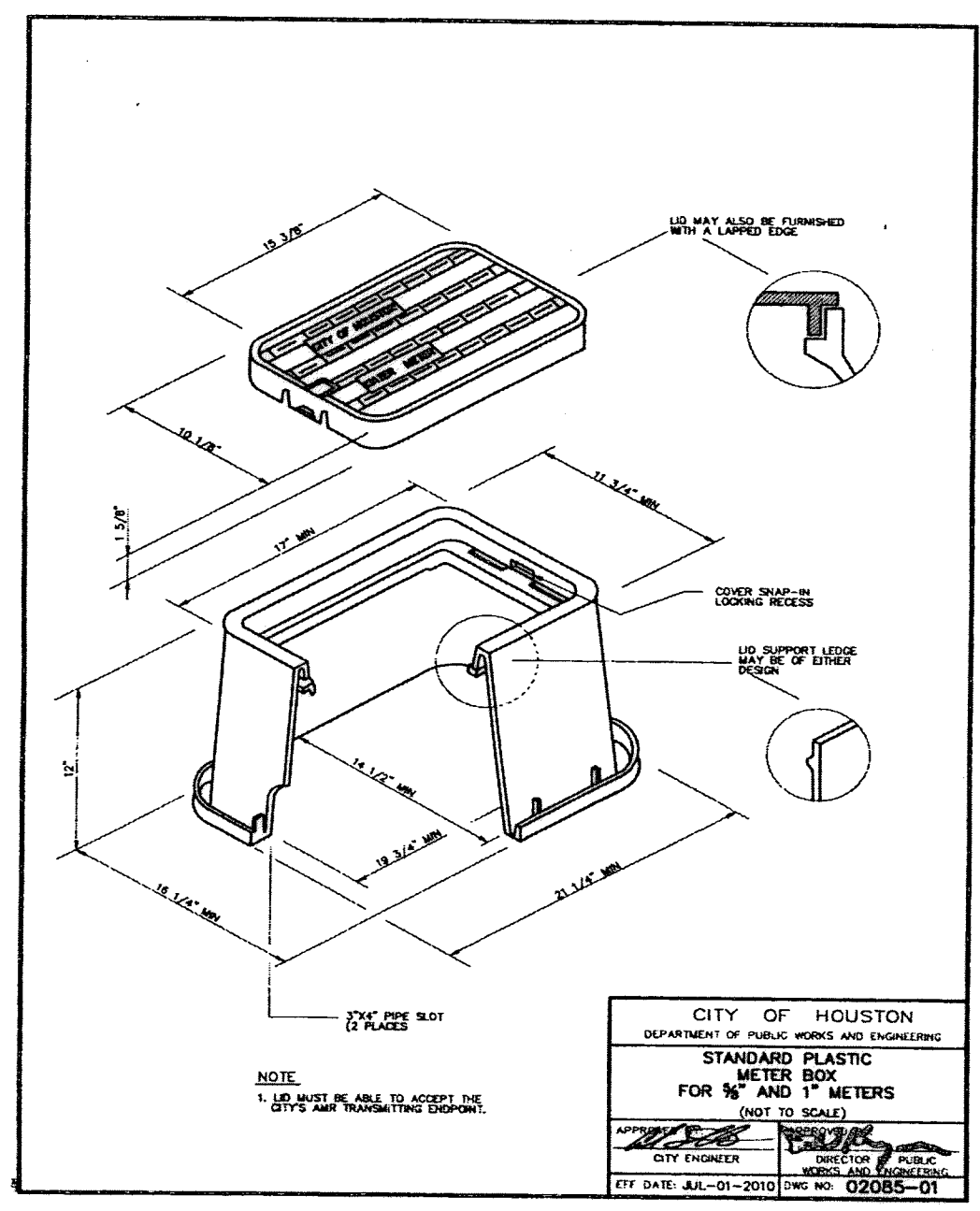
(NOT TO SCALE)

APPROVED BY: <i>Mark Hoch</i> CITY ENGINEER	APPROVED BY: <i>Richard M. ...</i> DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2009	DWG NO: 02775-06

<p align="center">Lockwood, Andrews &amp; Newnam, Inc. Firm No. 2814</p>		
<b>MEMORIAL CITY REDEVELOPMENT AUTHORITY</b>		
<b>LUMPKIN ROAD</b> N-T17000-0012-3 <b>WHEELCHAIR RAMP DETAILS</b>		
SHEET 2 OF 2		
<b>CITY OF HOUSTON</b> DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
NOT TO SCALE		
SHEET:	211 OF 226	

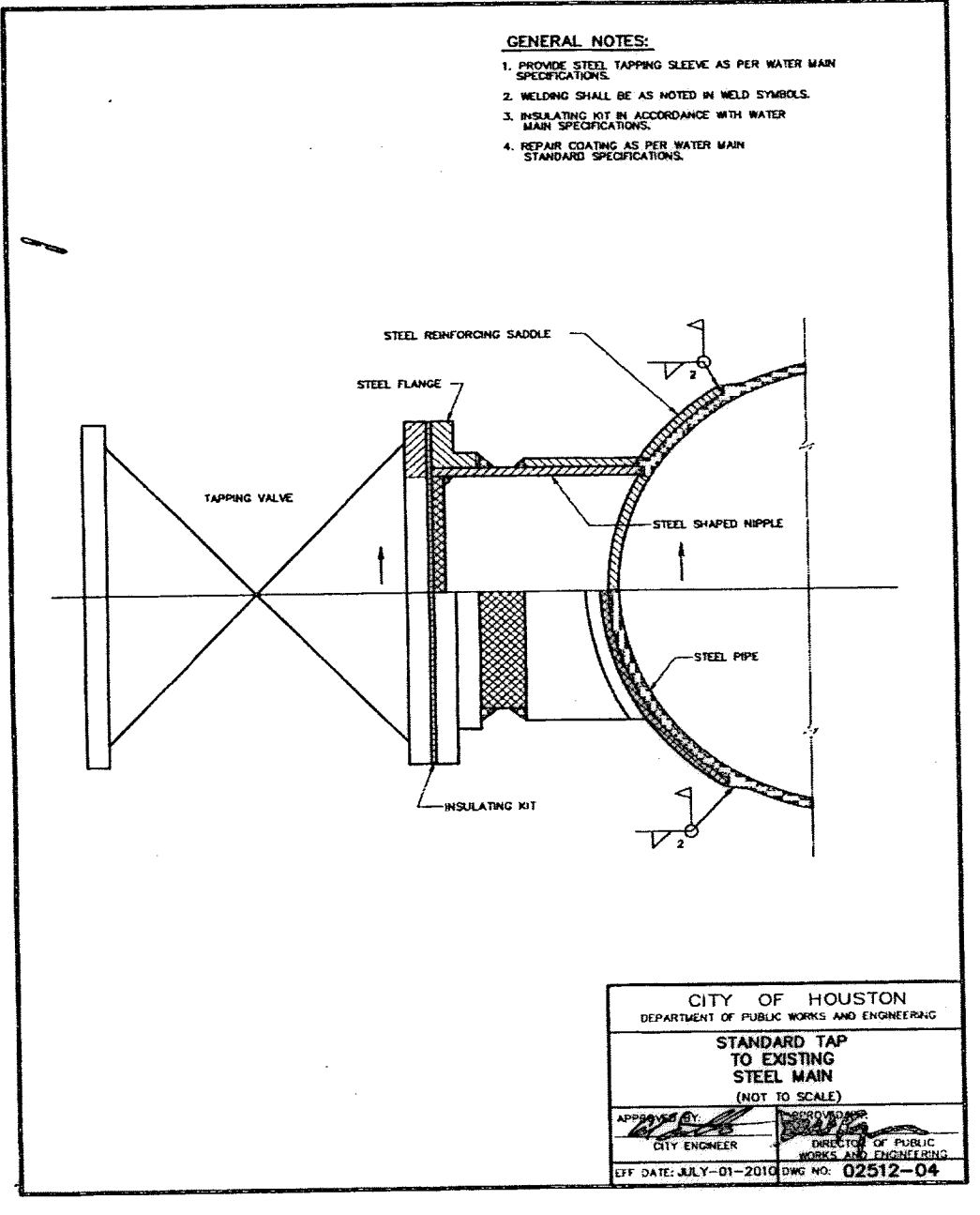
CDH

APP
REVISIONS
No.
DATE



WATER MAIN PIPE AND DIAMETER	SERVICE SIZE			
	3/4"	1"	1 1/2"	2"
4" CAST IRON OR DUCTILE IRON	DSS, WESS	DSS, WESS	DSS, WESS	DSS, WESS
4" ASBESTOS (EXISTING) CEMENT	WESS	WESS	DSS, WESS	DSS, WESS
4" PVC (ANNA C900)	DSS, WESS	DSS, WESS	DSS, WESS	DSS, WESS
6" AND 8" CAST IRON OR DUCTILE IRON	DSS, WESS	DSS, WESS	DSS, WESS	DSS, WESS
6" AND 8" ASBESTOS (EXISTING) CEMENT	DSS, WESS	DSS, WESS	DSS, WESS	DSS, WESS
6" AND 8" PVC (ANNA C900)	DSS, WESS	DSS, WESS	DSS, WESS	DSS, WESS
12" CAST IRON OR DUCTILE IRON	DSS, WESS	DSS, WESS	DSS, WESS	DSS, WESS
12" ASBESTOS (EXISTING) CEMENT	DSS, WESS	DSS, WESS	DSS, WESS	DSS, WESS
12" PVC (ANNA C900)	DSS, WESS	DSS, WESS	DSS, WESS	DSS, WESS
18" AND 18" CAST IRON OR DUCTILE IRON	DWESS	DWESS	DWESS	DWESS
18" AND 18" ASBESTOS (EXISTING) CEMENT	DWESS	DWESS	DWESS	DWESS
18" AND 18" PVC (ANNA C900)	DWESS	DWESS	DWESS	DWESS

DSS - DUAL STRAP SADDLES  
WESS - WIDE BAND STRAP SADDLES  
DWESS - DUAL WIDE BAND STRAP SADDLES



**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

**LUMPKIN ROAD  
N-T17000-0012-3**

**STANDARD WATER LINE DETAILS**

SHEET 1 OF 2

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

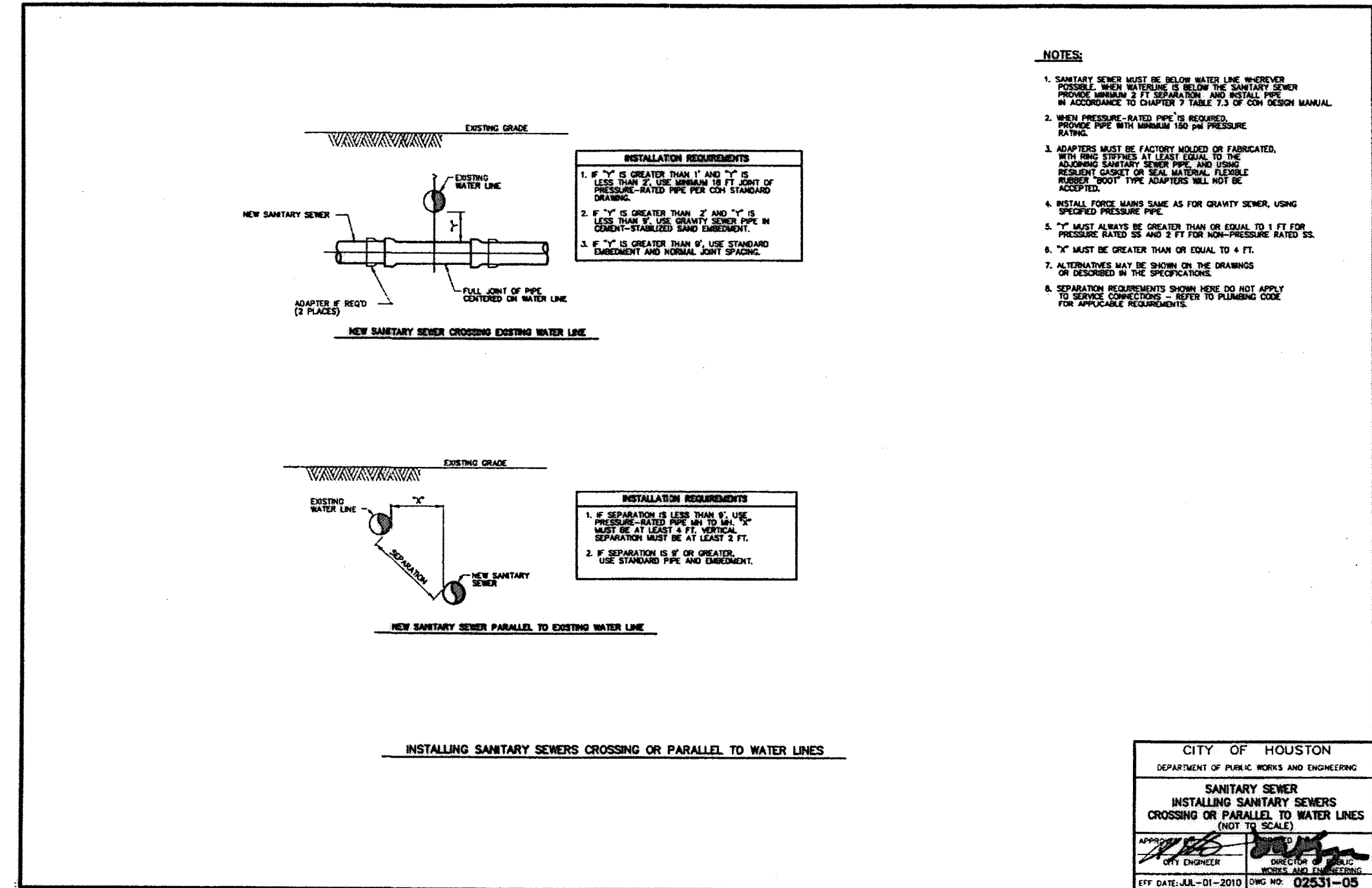
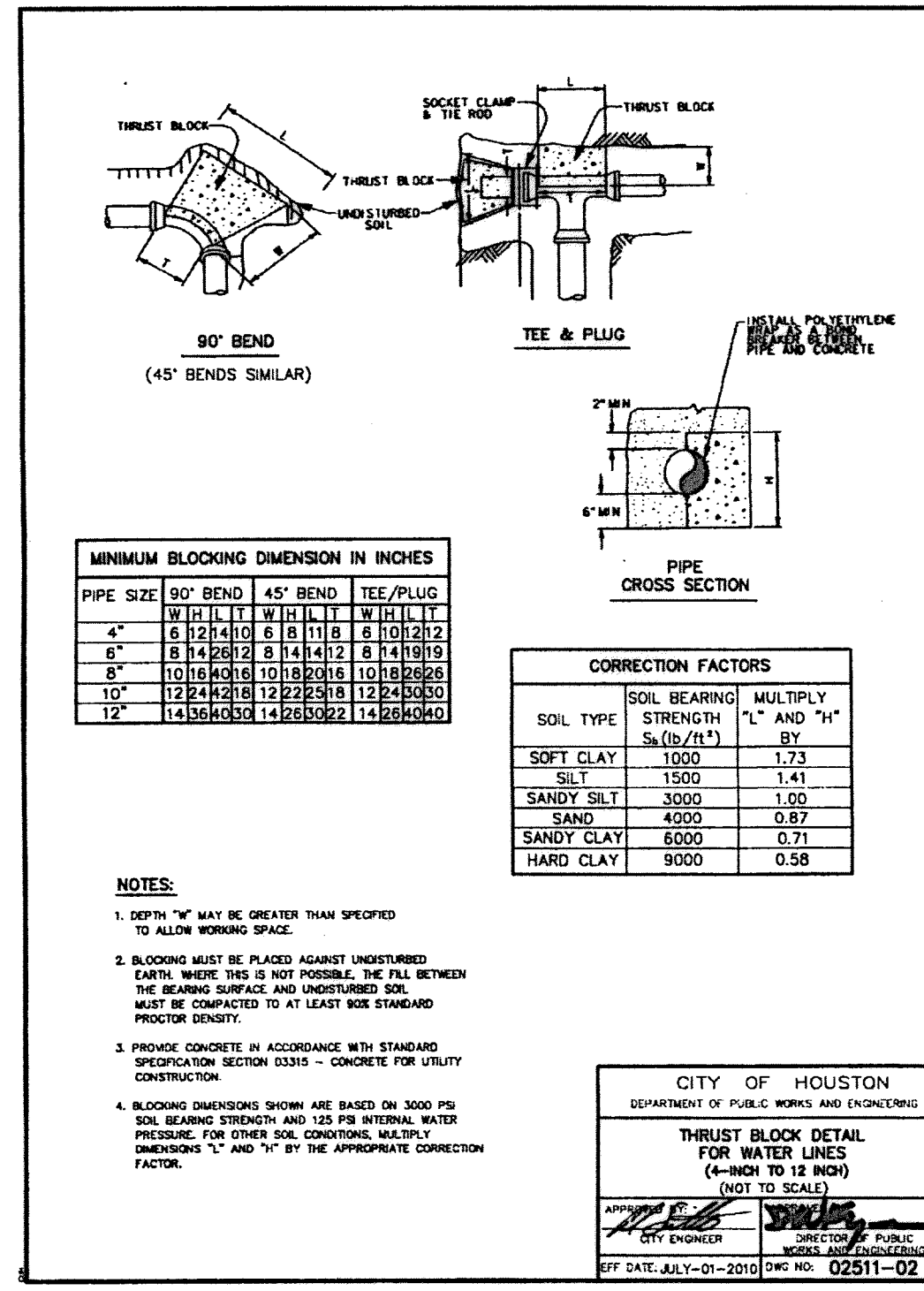
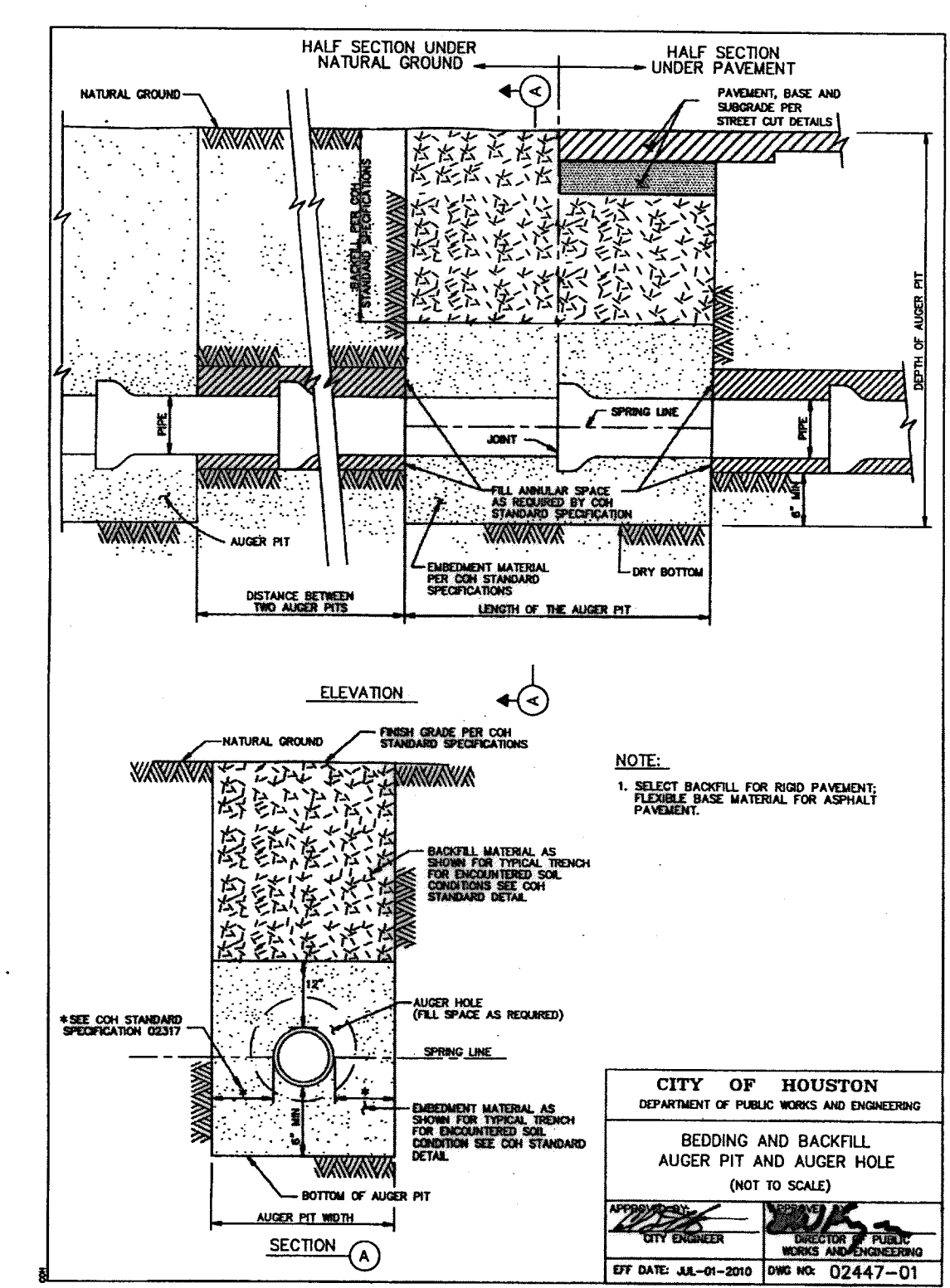
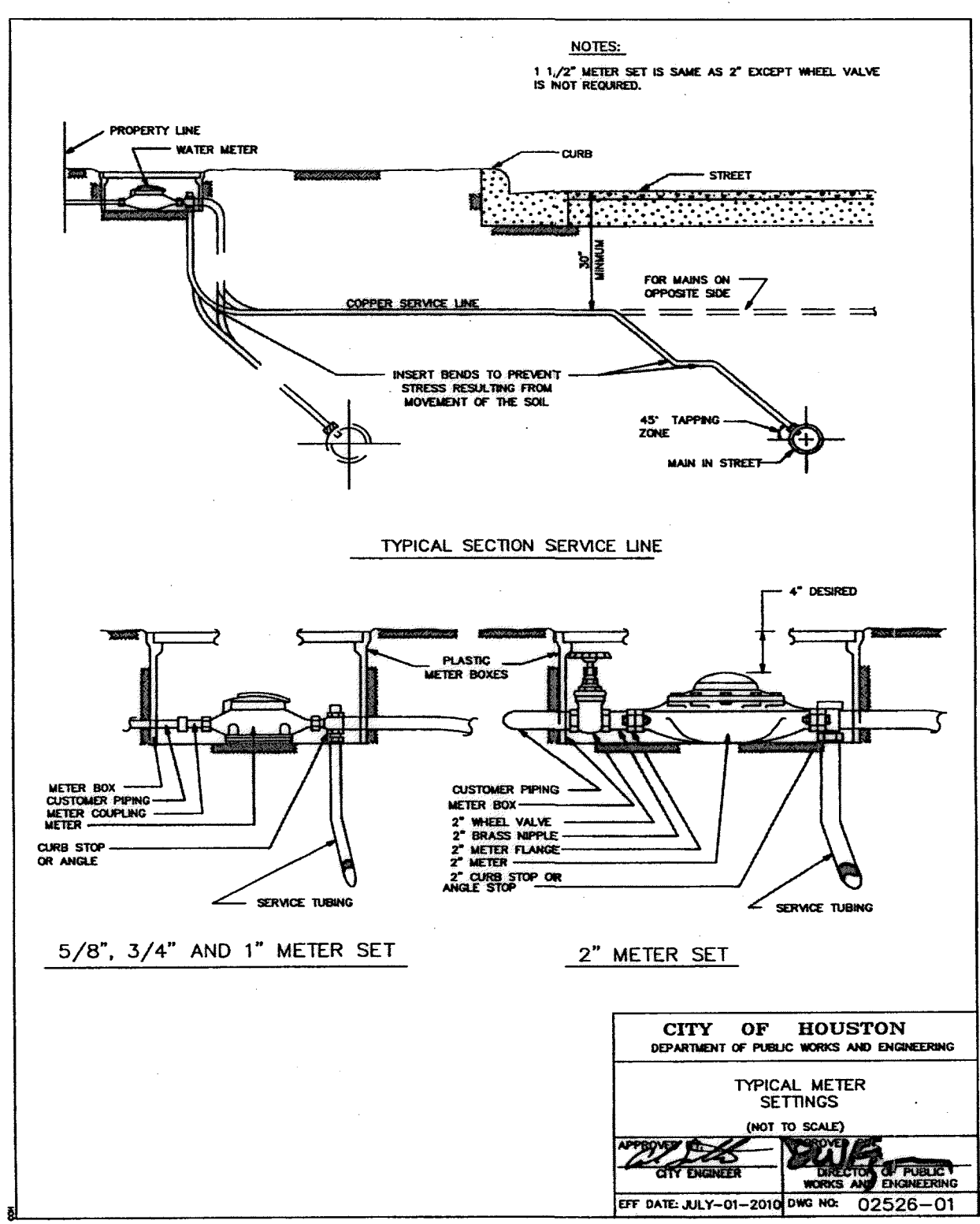
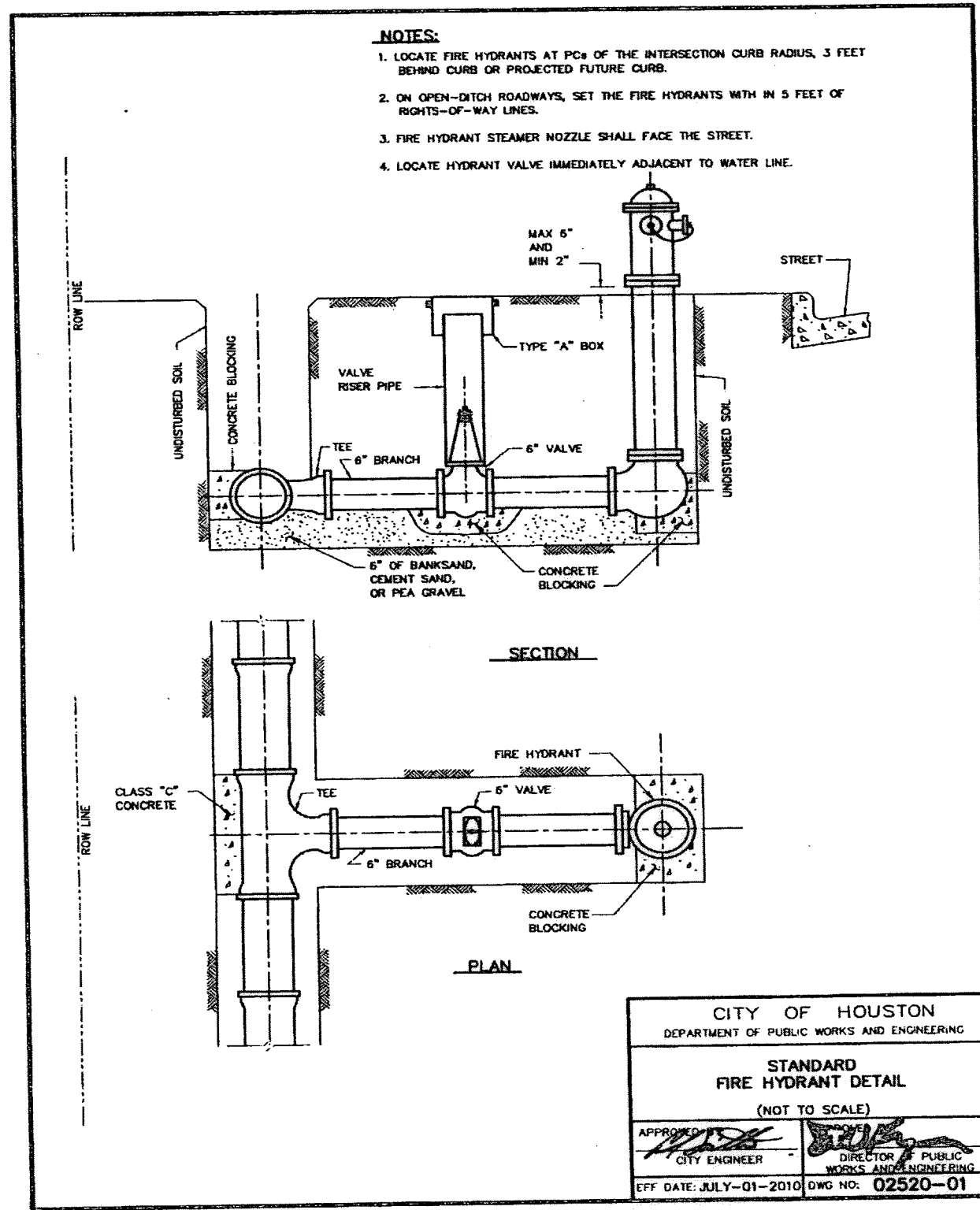
FILE NO. :                      FACILITY

DRAWING SCALE:            CITY DWG NO.

NOT TO SCALE

SHEETS:                      212 OF 226

pww \\ ledpw. laddo. mtr\proj\w\ee\Documents\Projects\130-10384-001\4-0-Product\04-01-Drawings\Civil\STANDARDS\186-545-00-Meter-Dtl.s 01/29/2014 2:09:44 PM MJDubhr-1e



MEMORIAL CITY REDEVELOPMENT AUTHORITY

**Lockwood, Andrews & Newnam, Inc.**  
A LEON DADY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
STANDARD WATER LINE DETAILS

SHEET 2 OF 2

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

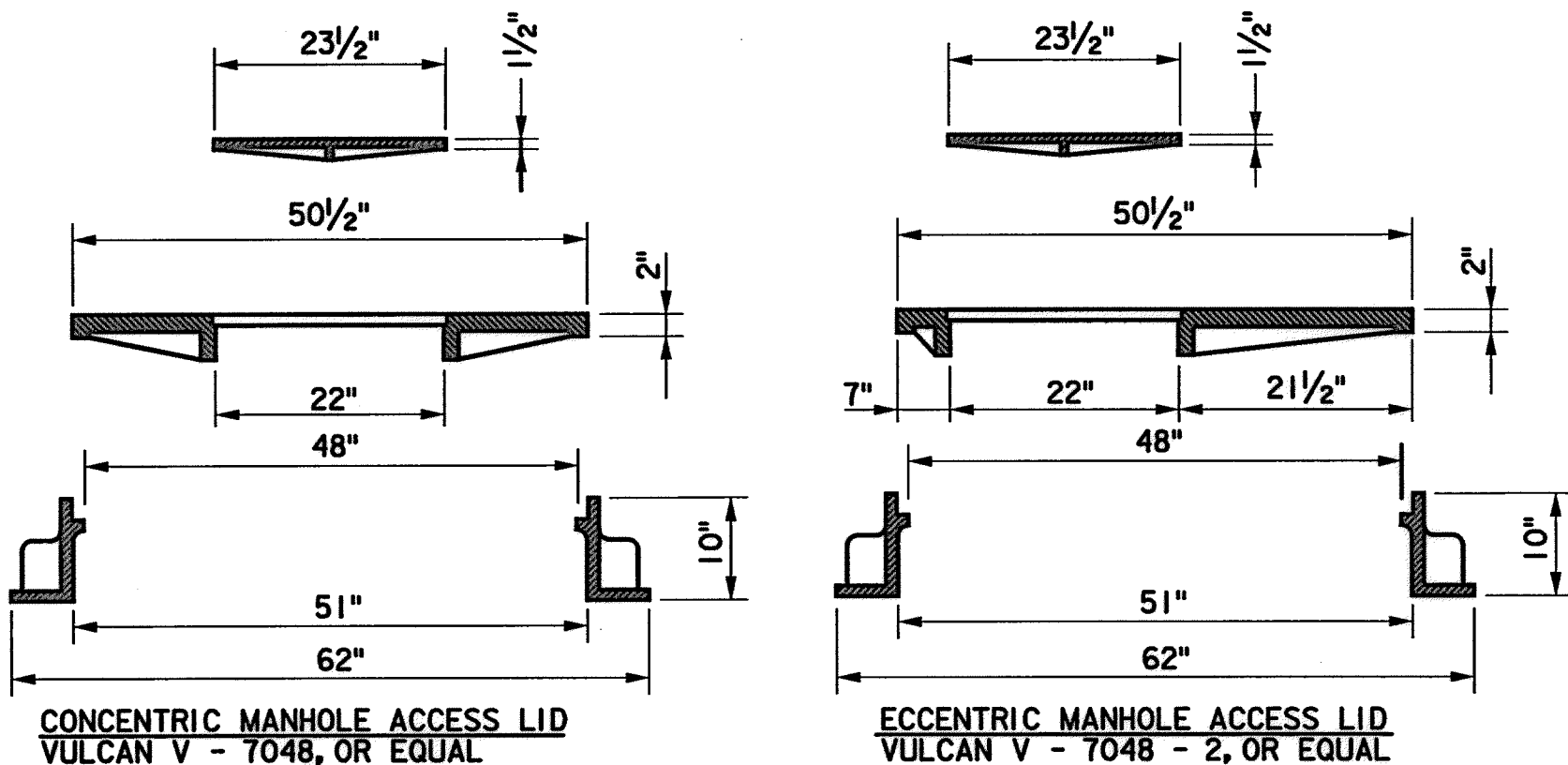
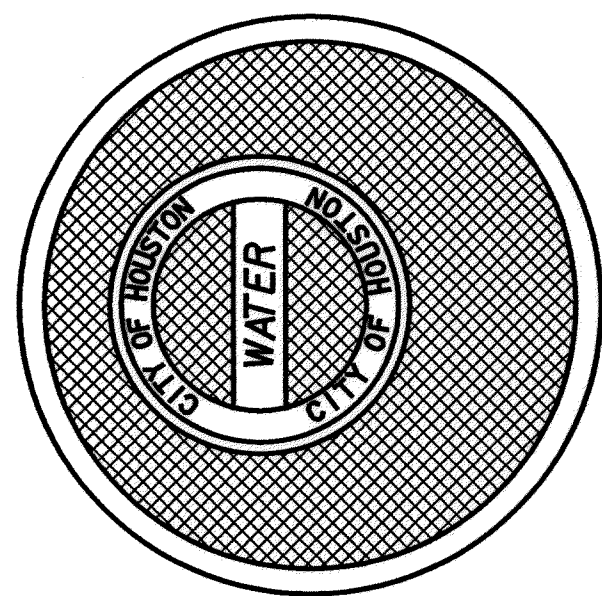
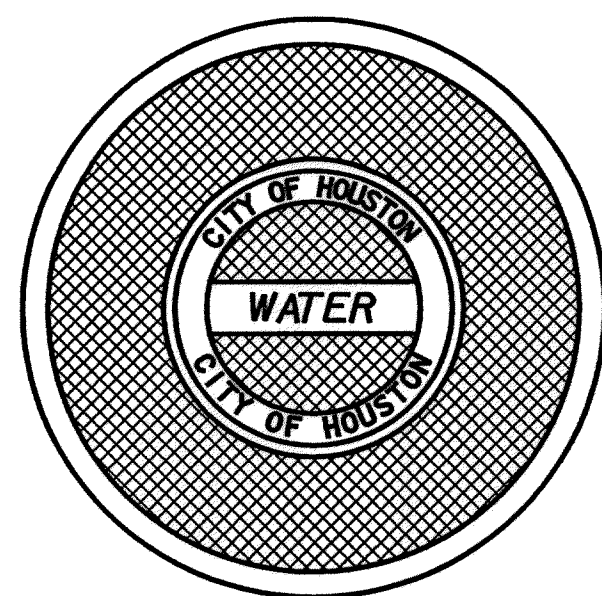
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO. :  
DRAWING SCALE: NOT TO SCALE  
SHEET: 213 OF 226

FACILITY  
CITY DWG NO.

NOTE:

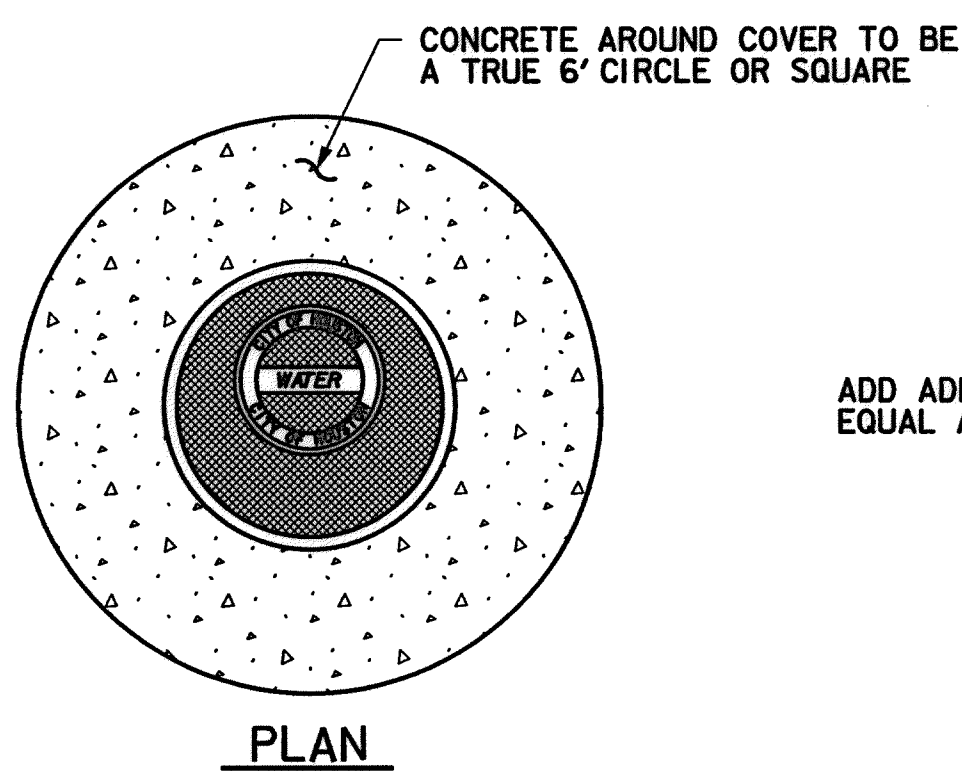
PROVIDE THREE (3) EXTRA CENTER LIDS FOR ECCENTRIC MANHOLE ACCESS LID. THE OTHER LIDS ARE TO BE DELIVERED TO C.O.H. UTILITY OPERATIONS



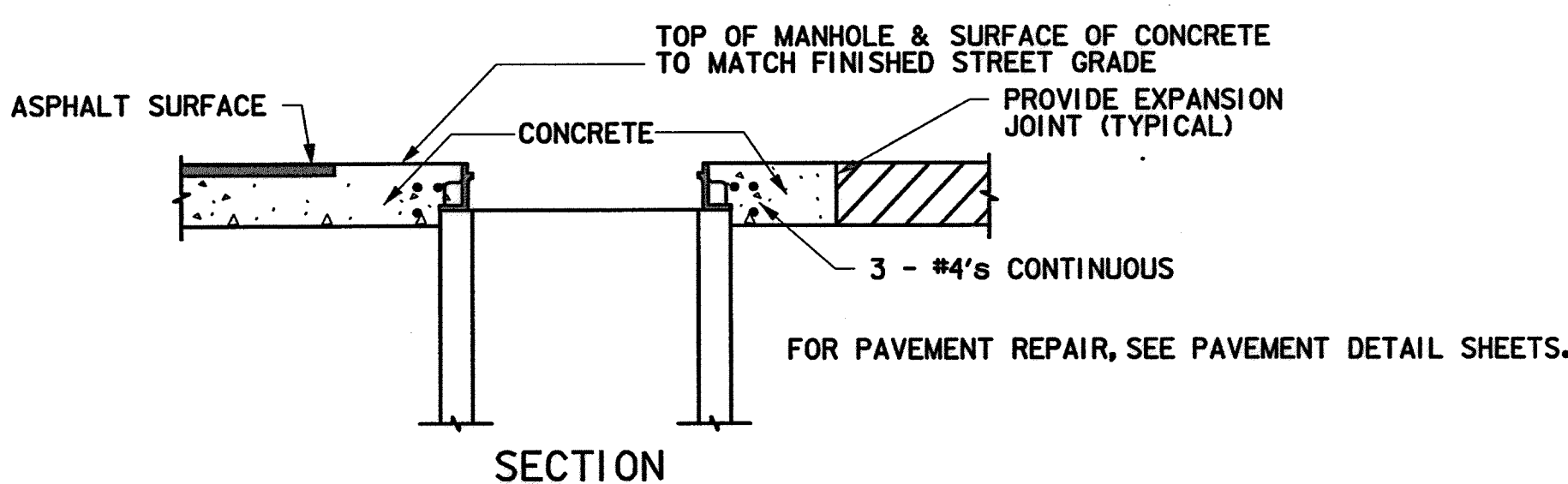
CONCENTRIC MANHOLE ACCESS LID VULCAN V - 7048, OR EQUAL

ECCENTRIC MANHOLE ACCESS LID VULCAN V - 7048 - 2, OR EQUAL

### 1 HEAVY DUTY MANHOLE RING AND COVER



PLAN

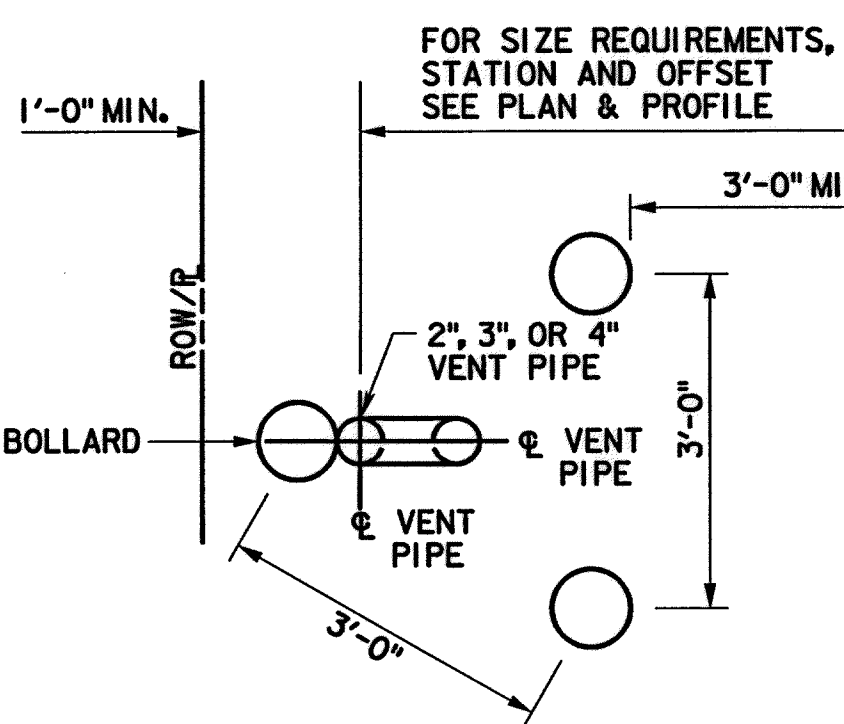


SECTION

NOTES:

- 1. CONSTRUCT THE FINAL TWO FEET OF THE MANHOLE AND PLACE CONCRETE WITHIN BLOCKOUT AFTER THE STREET PAVEMENT HAS BEEN INSTALLED.
- 2. FOR HEAVY DUTY MANHOLE RING, SEE DTL 1
- 3. FOR MANHOLE STEP DETAIL, SEE DTL 3

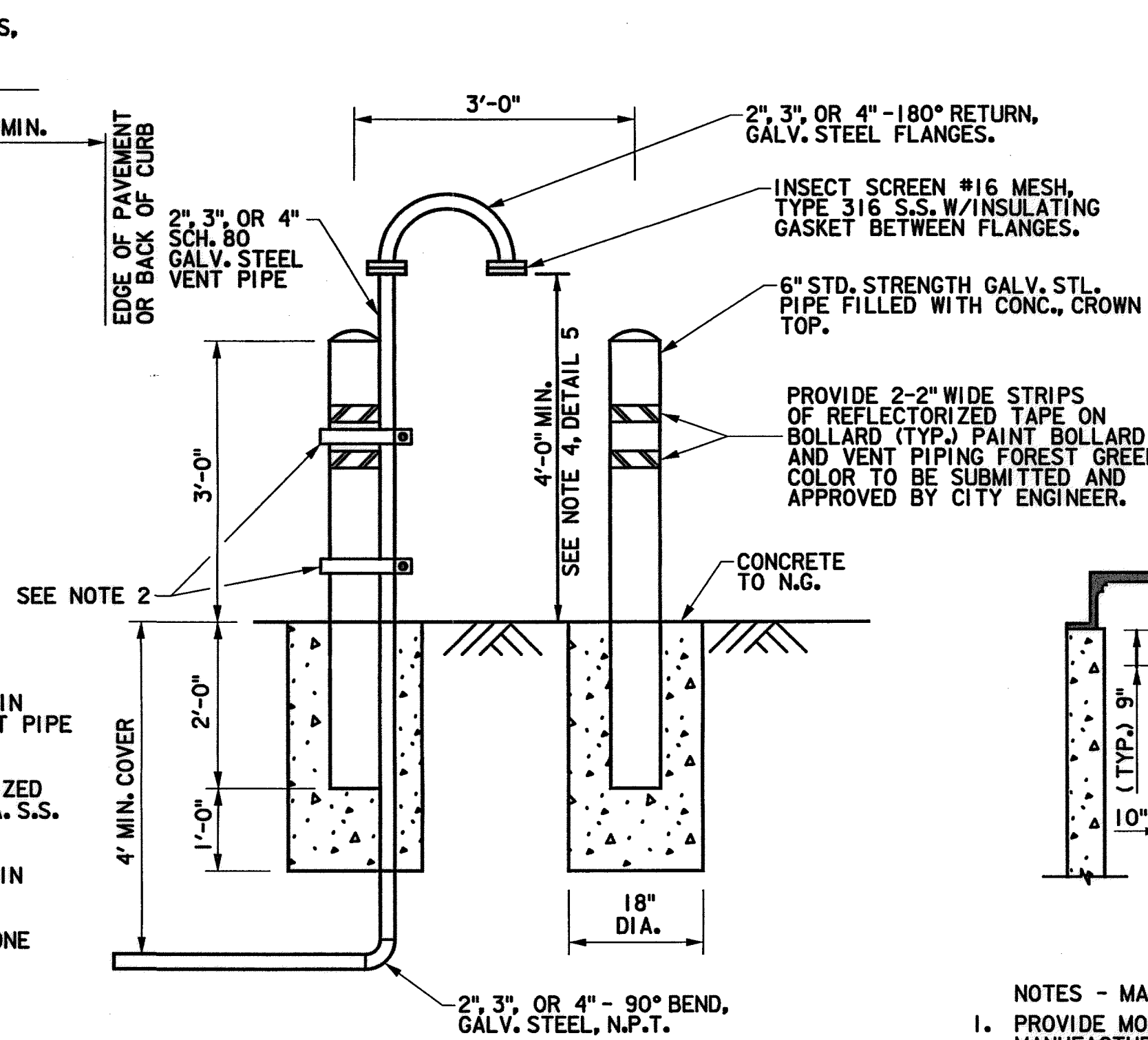
### 4 MANHOLE COLLAR DETAIL



NOTES - BOLLARDS:

- 1. 3 BOLLARDS SHOULD BE PROVIDED IN TRIANGULAR PATTERN AROUND VENT PIPE OR ANODE PIPE.
- 2. 2 - 1 1/2" WIDE x 3/16" THICK GALVANIZED STEEL STRAPS SECURED W/ 5/16" DIA. S.S. BOLTS.
- 3. CLASS B CONCRETE WILL BE USED IN AND AROUND BOLLARDS.
- 4. SEE DETAIL 2A FOR LOCATION OF ONE BOLLARD AROUND VENT PIPE.

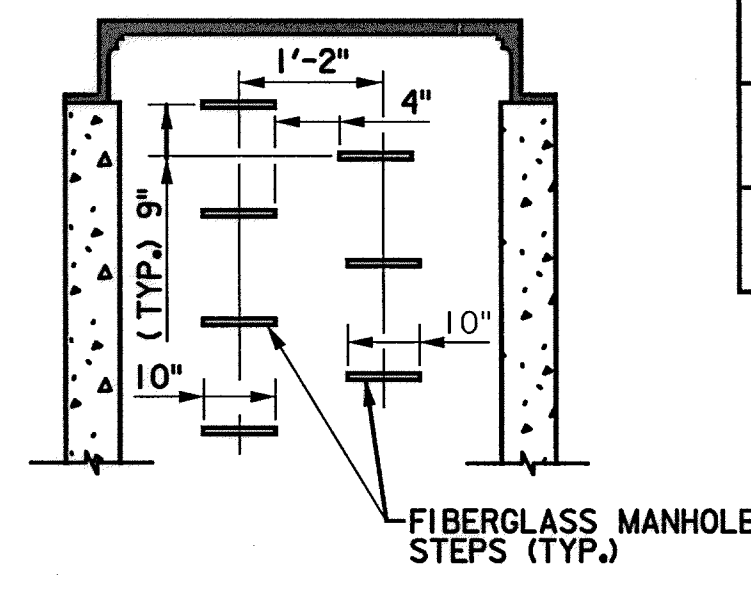
### 2 VENT PIPE WITH 3 BOLLARDS DETAIL



NOTES - MANHOLE STEPS:

- 1. PROVIDE MODEL PSI-PF STEPS AS MANUFACTURED BY M.A. INDUSTRIES INC. OR APPROVED EQUAL.
- 2. BOTTOM MANHOLE STEP SHALL BE NO HIGHER THAN 12" ABOVE MANHOLE INVERT.

### 3 MANHOLE STEP DETAIL



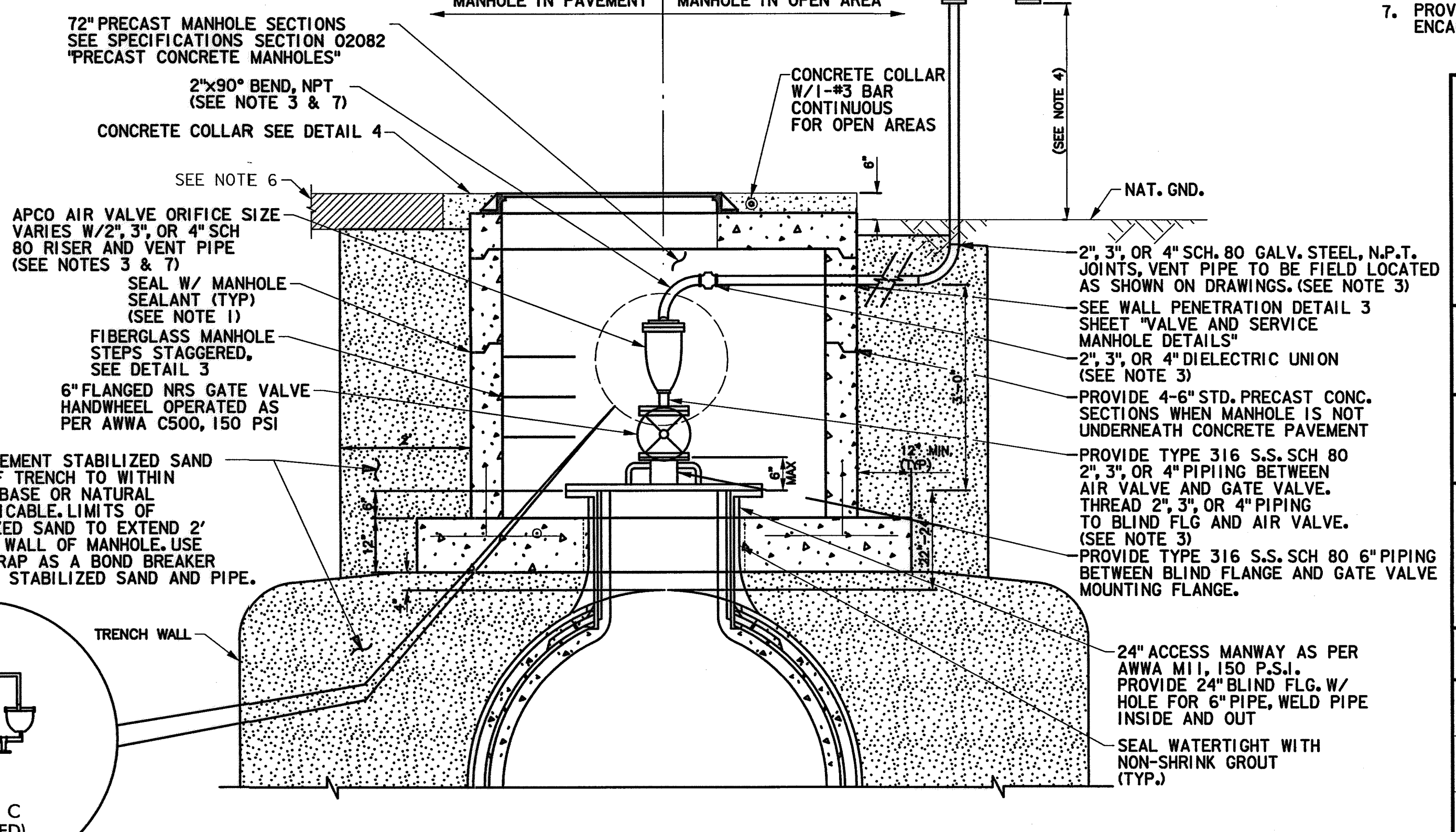
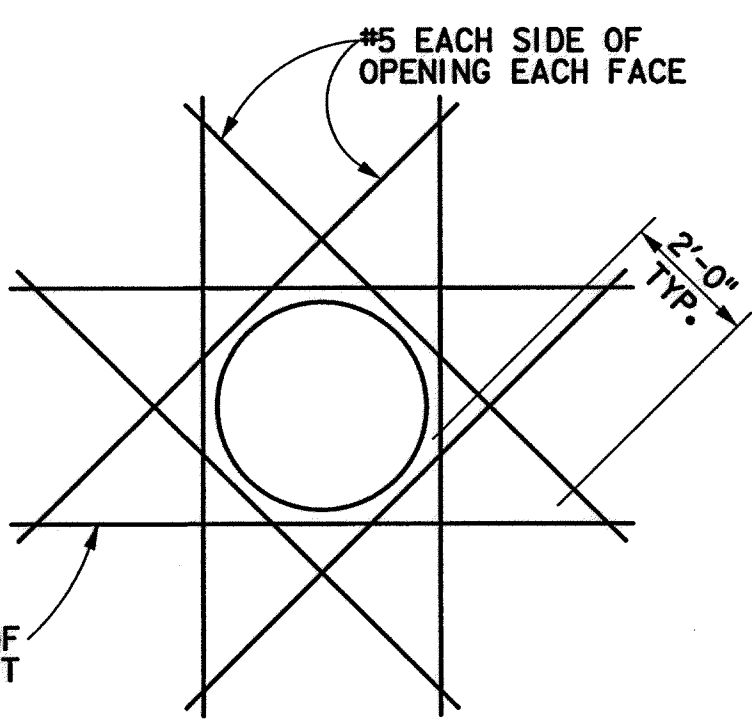
AIR VALVE AND TYPES				
WATER MAIN DIAMETER	APCO# SERIES	AIR VALVE SIZE	APCO# MODEL	MH SIZE
<36"	140C	2"	145C	60"
		3"	147C	60"
>=36"	1500C	3"	1503C	72"
		4"	1504C	72"

\* OR APPROVED EQUAL

NOTES - DETAIL 6:

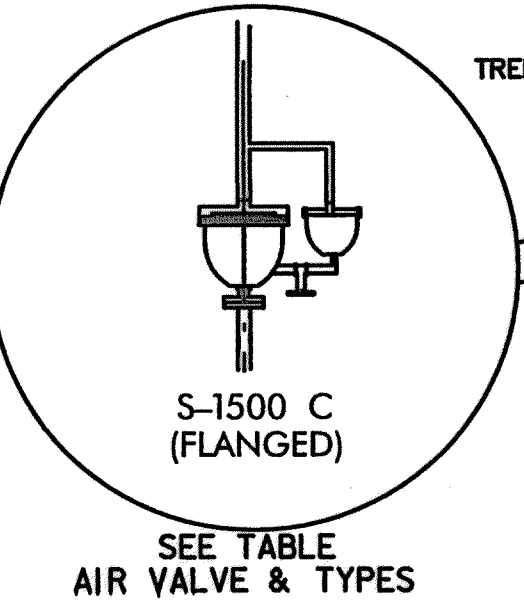
- 1. PROVIDE RAM-NEK OR APPROVED EQUAL BETWEEN PRECAST SEGMENTS OF THE MANHOLE.
- 2. FOR MANHOLES DEEPER THAN 20 FEET, SAFETY CLIMBING RAIL MUST BE PROVIDED (SAF-T-CLIMB OR APPROVED EQUAL).
- 3. PIPING AND APPURTENANCES OF THE SAME DIAMETER AND CONSTRUCTED OF THE SAME MATERIAL AND CLASS.
- 4. VERIFY THAT LOCATION OF VENT PIPE SCREEN IS 1 FOOT ABOVE 100-YEAR FLOOD PLAIN ELEVATION OR 4 FEET ABOVE NATURAL GROUND WHICHEVER IS HIGHER.
- 5. REFER TO PLAN AND PROFILE SHEETS FOR LOCATIONS OF AIR VALVES.
- 6. FOR PAVEMENT REPAIR, SEE PAVEMENT DETAIL SHEETS.
- 7. PROVIDE AN APPROVED PETROLEUM BASED TAPE ENCAPSULATING ALL BOLTS IN ACCESS MANHOLE.

### 5 SERVICE MANHOLE REINFORCEMENT DTL



### 6 AIR VALVE ASSEMBLY IN SERVICE MANHOLE

(FOR WATER LINES 36-INCH IN DIAMETER AND LARGER)



SEE TABLE AIR VALVE & TYPES



### MEMORIAL CITY REDEVELOPMENT AUTHORITY

### Lockwood, Andrews & Newnam, Inc. A LEONARDO COMPANY

LUMPKIN ROAD N-T17000-0012-3 AIR VALVE ASSEMBLY DETAILS

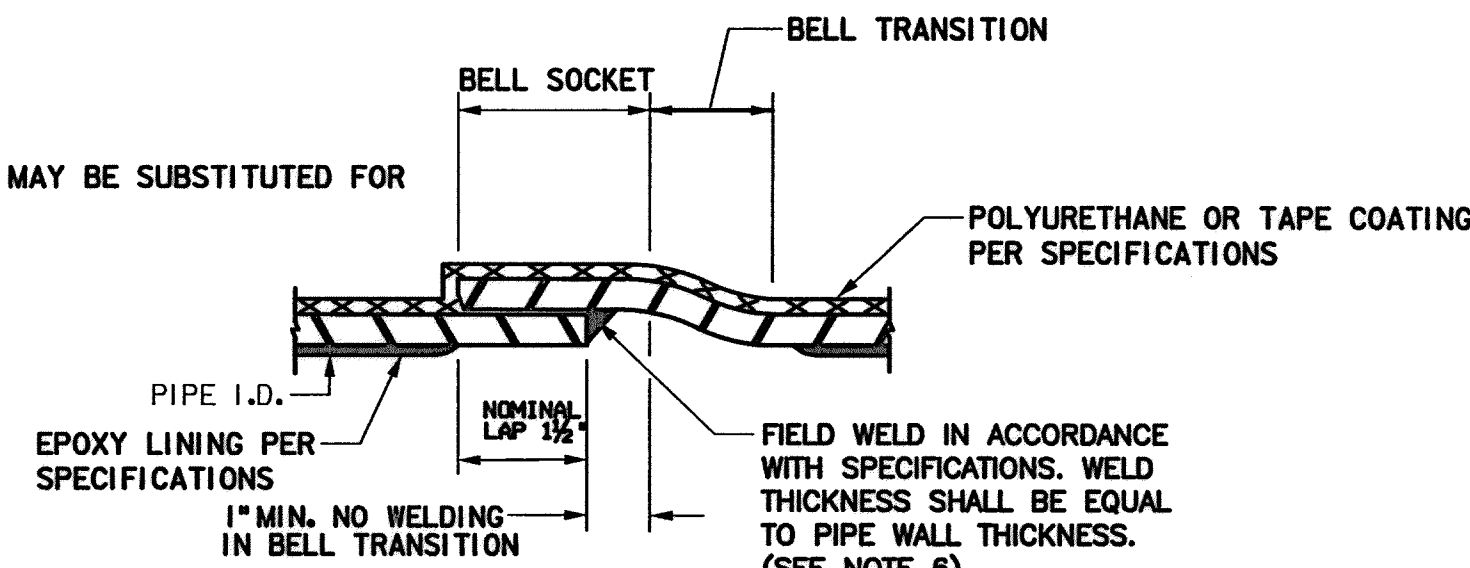
SHEET 1 OF 1

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG. NO.	
NOT TO SCALE		
SHEET:	214 OF 226	

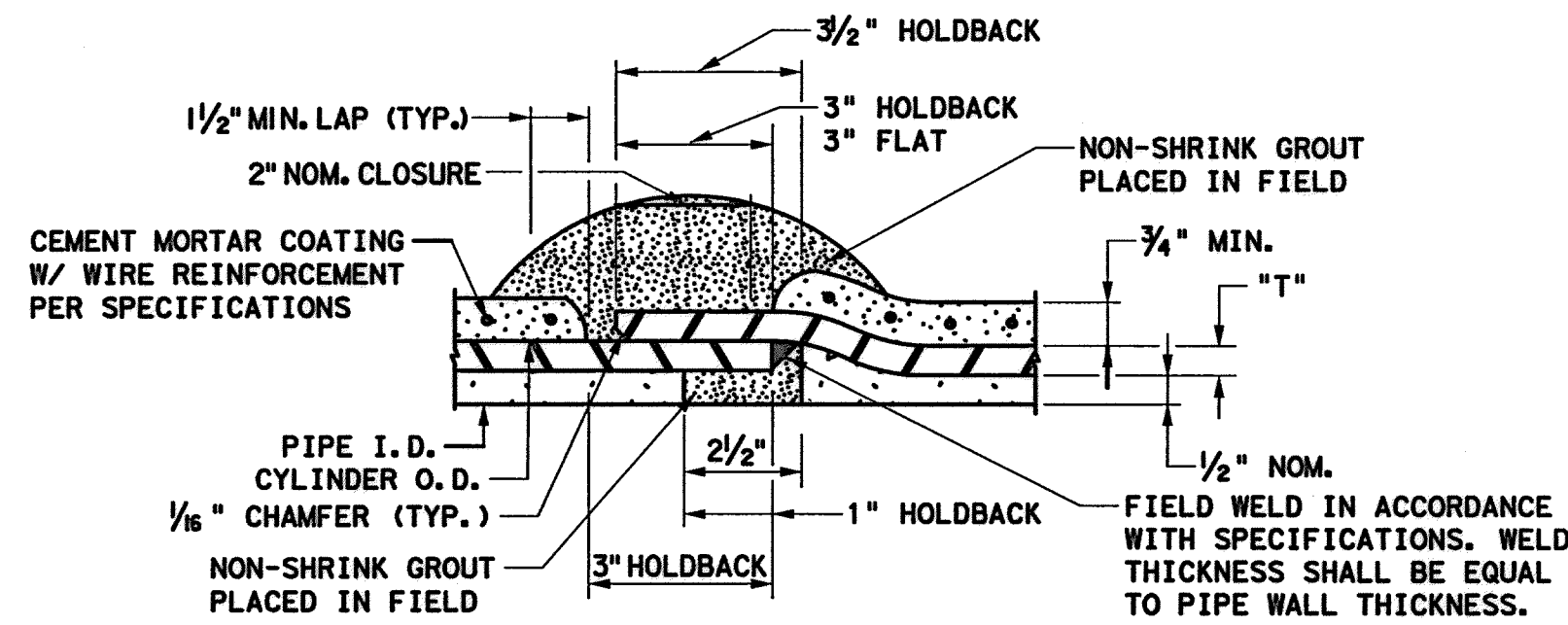
APP. REVISIONS. DATE. No. MUG 04/14 2:23:07 PM 9/3/2014 13064-001-Drawings\City of Houston\Standards\AIR Valve Detail.s.dgn

NOTES:

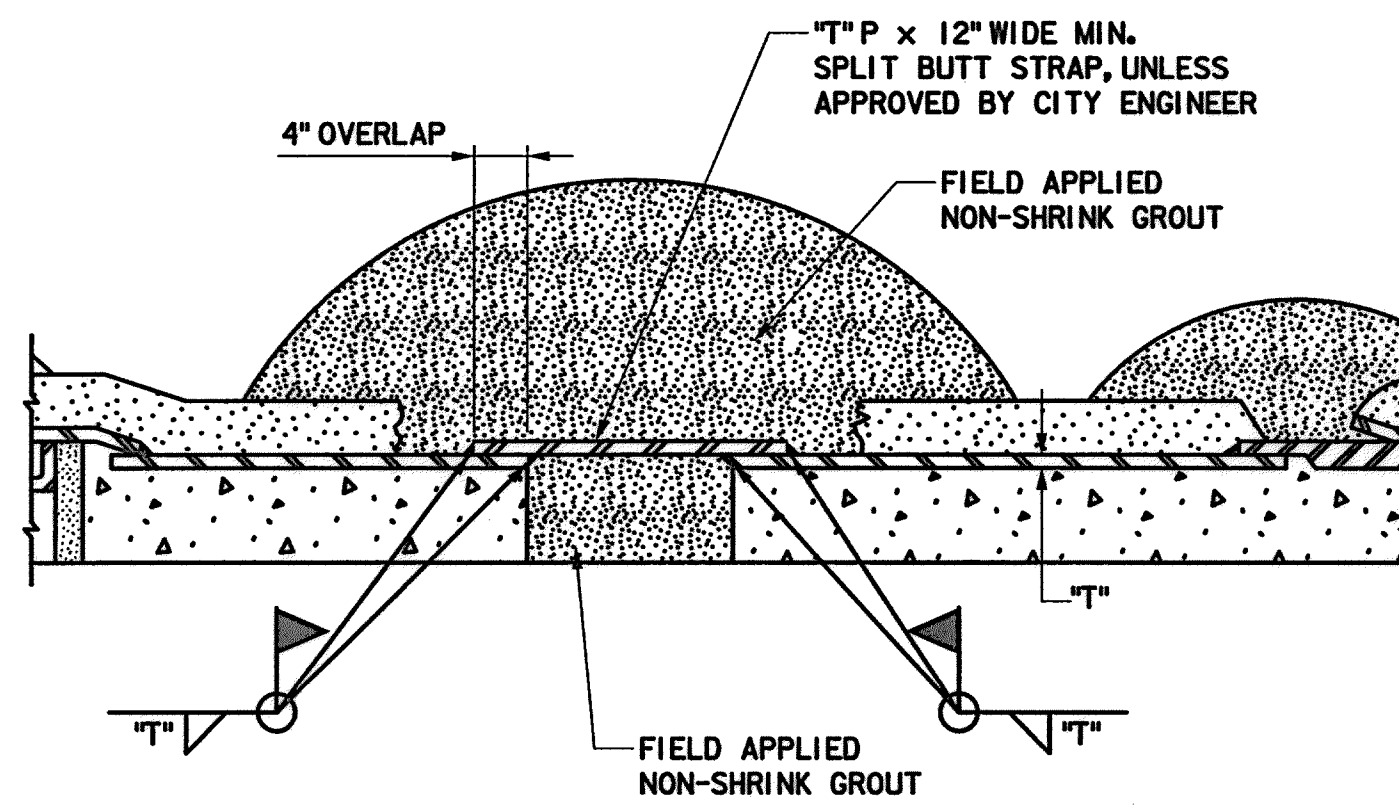
1. OUTSIDE WELD MAY BE SUBSTITUTED FOR INSIDE WELD



1 LAP-WELD FIELD JOINT - STEEL PIPE JOINT  
FLEXIBLE COATING AND LINING



2 LAP-WELD FIELD JOINT - STEEL PIPE JOINT  
CEMENT MORTAR LINED & CEMENT MORTAR COATED



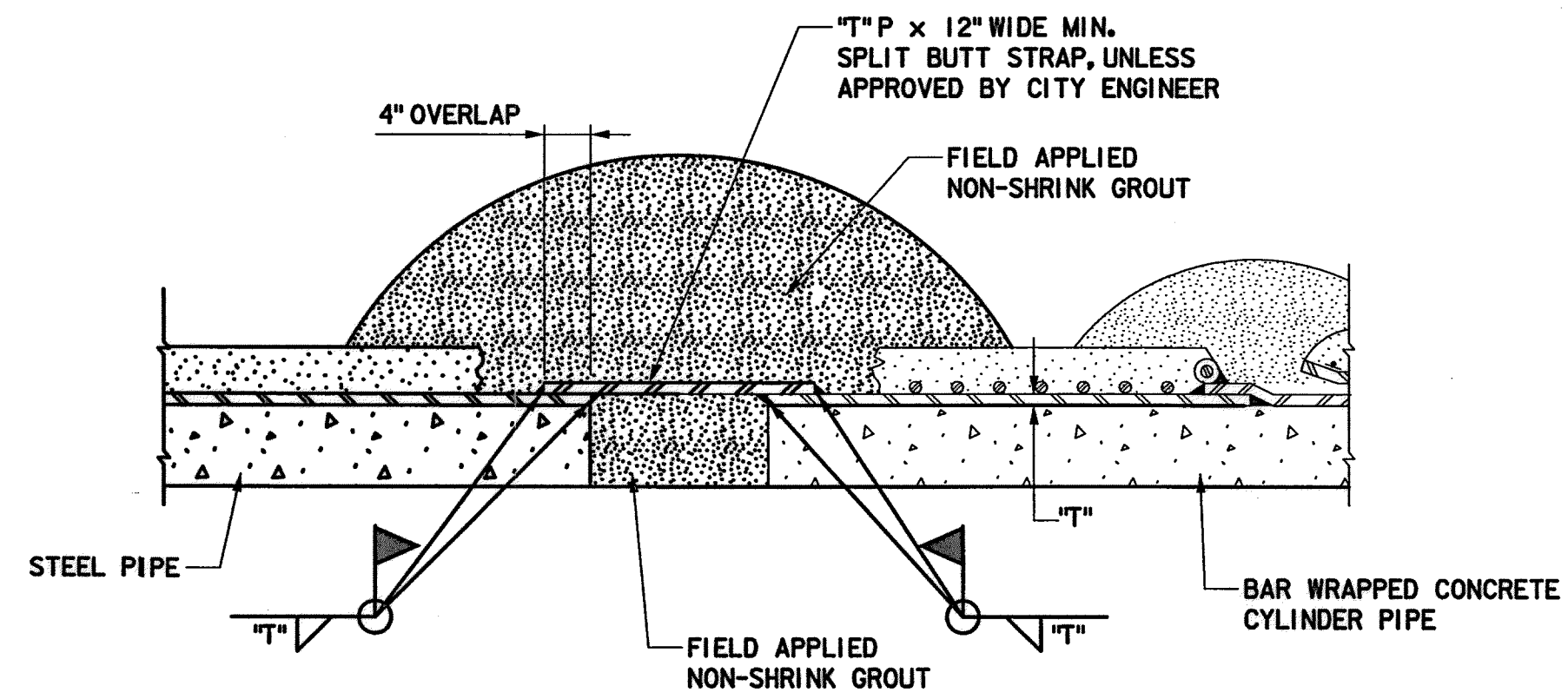
NOTES:

1. WELD SIZE SHALL MATCH THICKNESS OF BUTT STRAP AND CARRIER PIPE, AS RECOMMENDED BY THE PIPE MANUFACTURER.
2. INTERNAL WELD NOT REQUIRED FOR 30" DIAMETER PIPE AND SMALLER.
3. NO ANGULAR DEFLECTION ALLOWED.

3 CLOSURE PIECE  
FOR STEEL PIPE WITH CEMENT MORTAR LINED AND CEMENT MORTAR COATED  
(SIMILAR FOR FLEXIBLE COATING AND LINING)

NOTES:

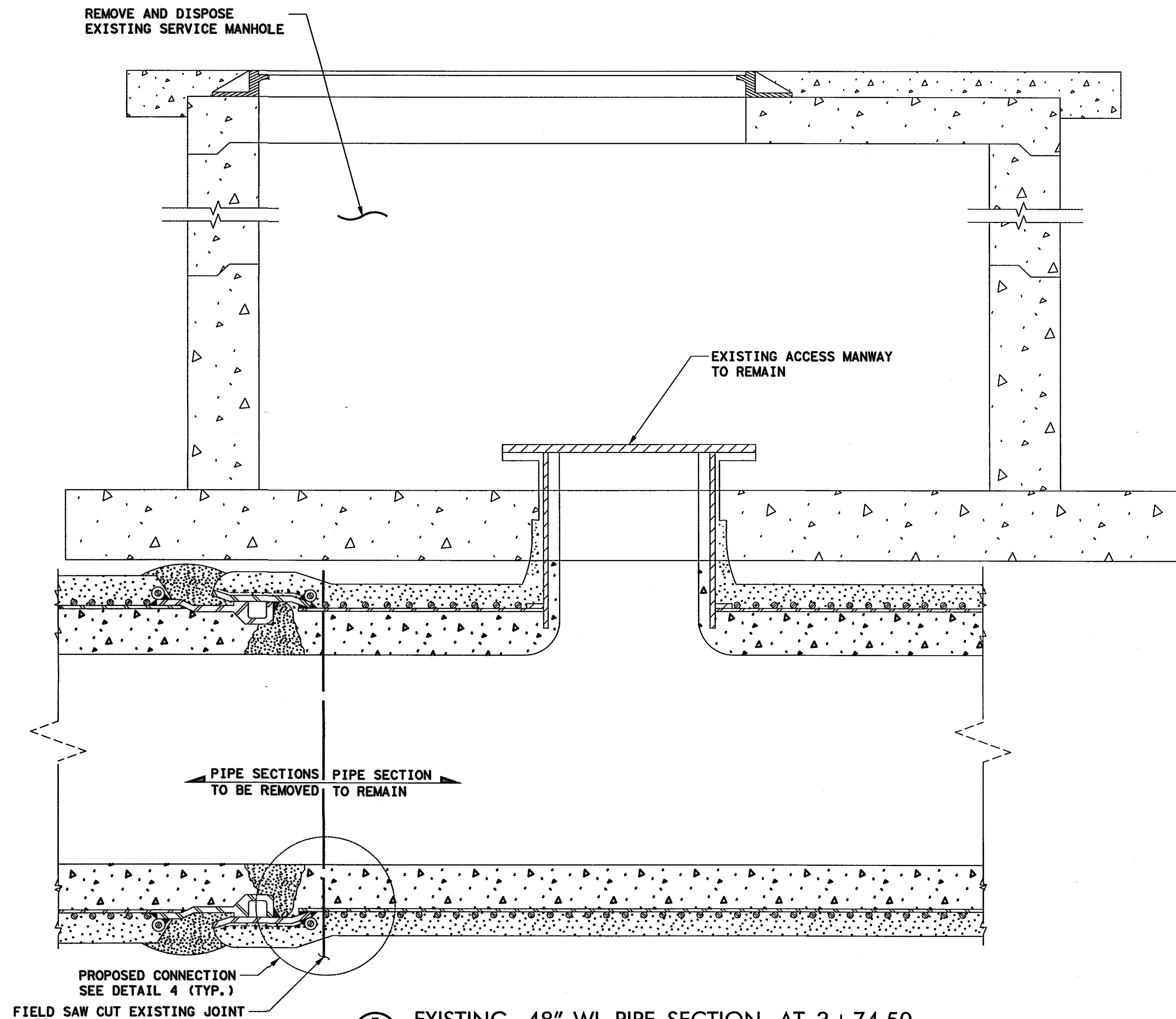
1. T = STEEL PIPE WALL THICKNESS AND SIZE OF FILLET ATTACHMENT WELD.
2. ALL REFERENCES TO PIPE DIAMETER FOR THIS PROJECT SHALL SIGNIFY SIZE MEASURED TO INSIDE DIAMETER OF THE LINED PIPE.
3. REFER TO SPECIFICATIONS FOR POLYURETHANE ALTERNATIVE TO TAPE OR CEMENT MORTAR COATING.
4. DETAILS 1, 2, 4 AND 7 SHOW EPOXY LINING. CEMENT MORTAR LINING TO BE SIMILAR TO DETAILS ON THIS SHEET SHOWING CEMENT MORTAR LINED PIPE, AS APPROVED BY CITY ENGINEER.
5. DETAILS 3, 5, 6, AND 9 SHOW CEMENT MORTAR COATING.
6. SEE SPECIFICATIONS FOR REPAIR OF EPOXY LINING.
7. WHEN CEMENT MORTAR COATING IS USED FOR STEEL PIPE, FLEXIBLE MASTIC SEALER SHALL BE APPLIED TO THE EXTERIOR OF THE JOINT PRIOR TO JOINT ENGAGEMENT WHEN PIPE IS INSTALLED IN A TUNNEL OR ENCASMENT PIPE.



NOTES:

1. WELD SIZE SHALL MATCH THICKNESS OF BUTT STRAP AND CARRIER PIPE, AS RECOMMENDED BY THE PIPE MANUFACTURER.
2. INTERNAL WELD NOT REQUIRED FOR 30" DIAMETER PIPE AND SMALLER.
3. NO ANGULAR DEFLECTION ALLOWED.

4 CLOSURE PIECE  
FOR PROPOSED STEEL PIPE WITH CEMENT MORTAR LINED AND CEMENT MORTAR COATED AND EXISTING BAR WRAPPED CONCRETE CYLINDER PIPE  
(SIMILAR FOR FLEXIBLE COATING STEEL PIPE)



5 EXISTING 48" WL PIPE SECTION AT 3+74.50  
SCALE: NTS

MEMORIAL CITY  
REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
LARGE DIAMETER  
STANDARD WATER CONNECTION  
DETAILS

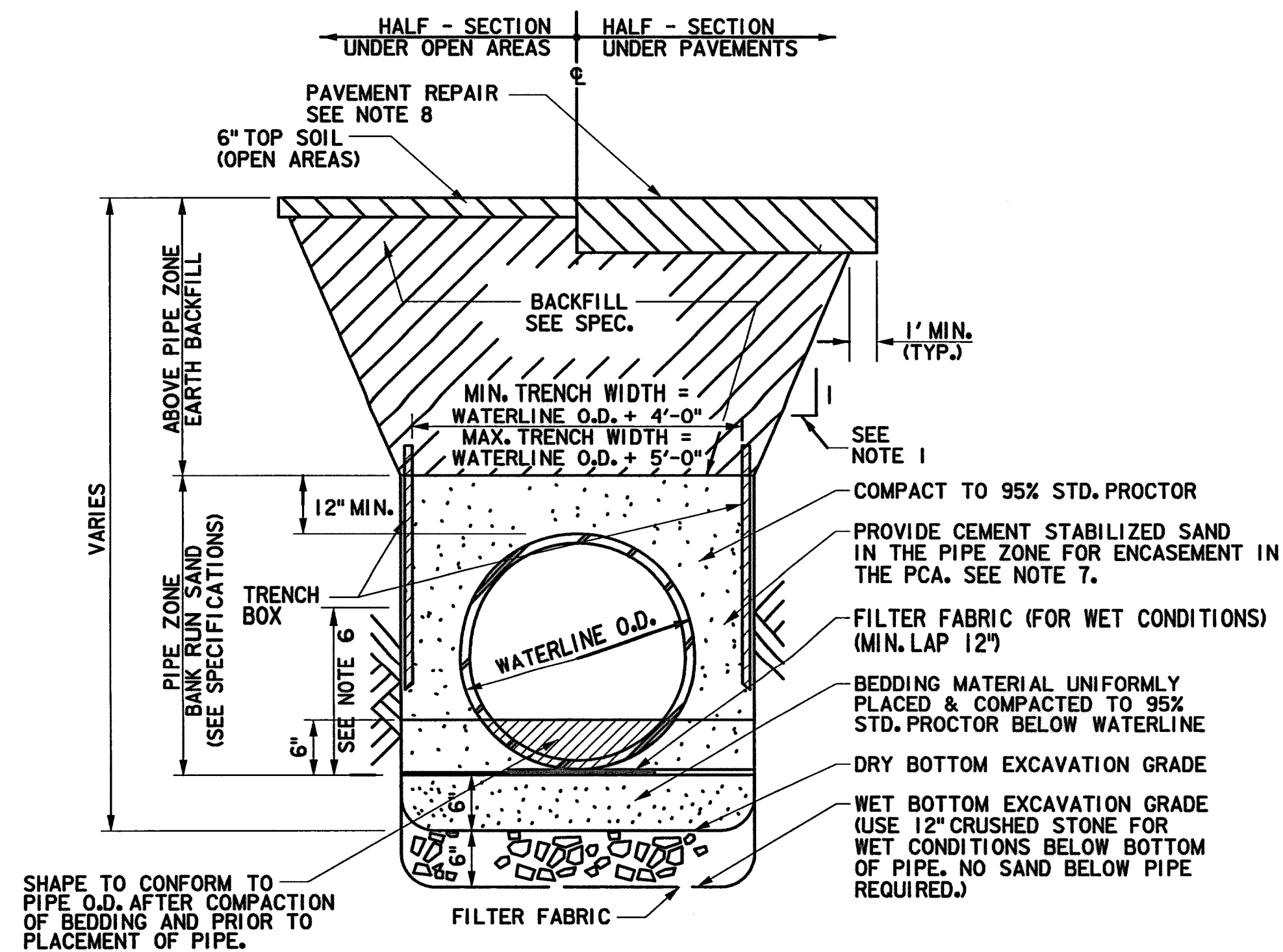
SHEET 1 OF 1

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWO

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG. NO.
NOT TO SCALE	
SHEET:	
215 OF 226	

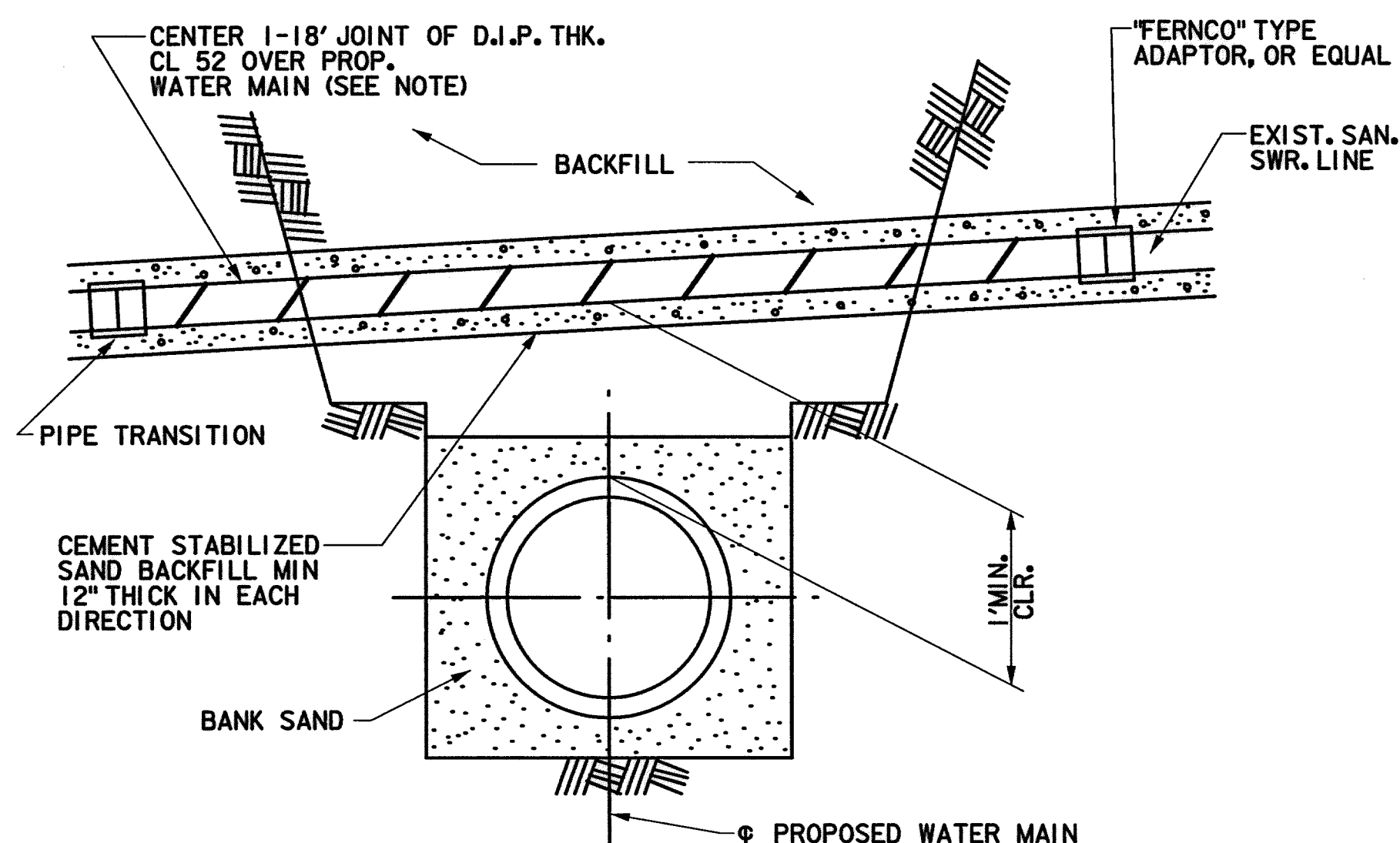
p:\lad\proj\addoc... Documents\Projects\1309-10384-001\4-0-Products\Civil\STANDARD\Drawings\Civil\Drawings\4-01-Drawings\4-01-dgn 9/3/2014 2:23:59 PM



1 EXCAVATION & BACKFILL DETAIL  
(FOR LARGE DIAMETER WATER MAIN)

**NOTES:**

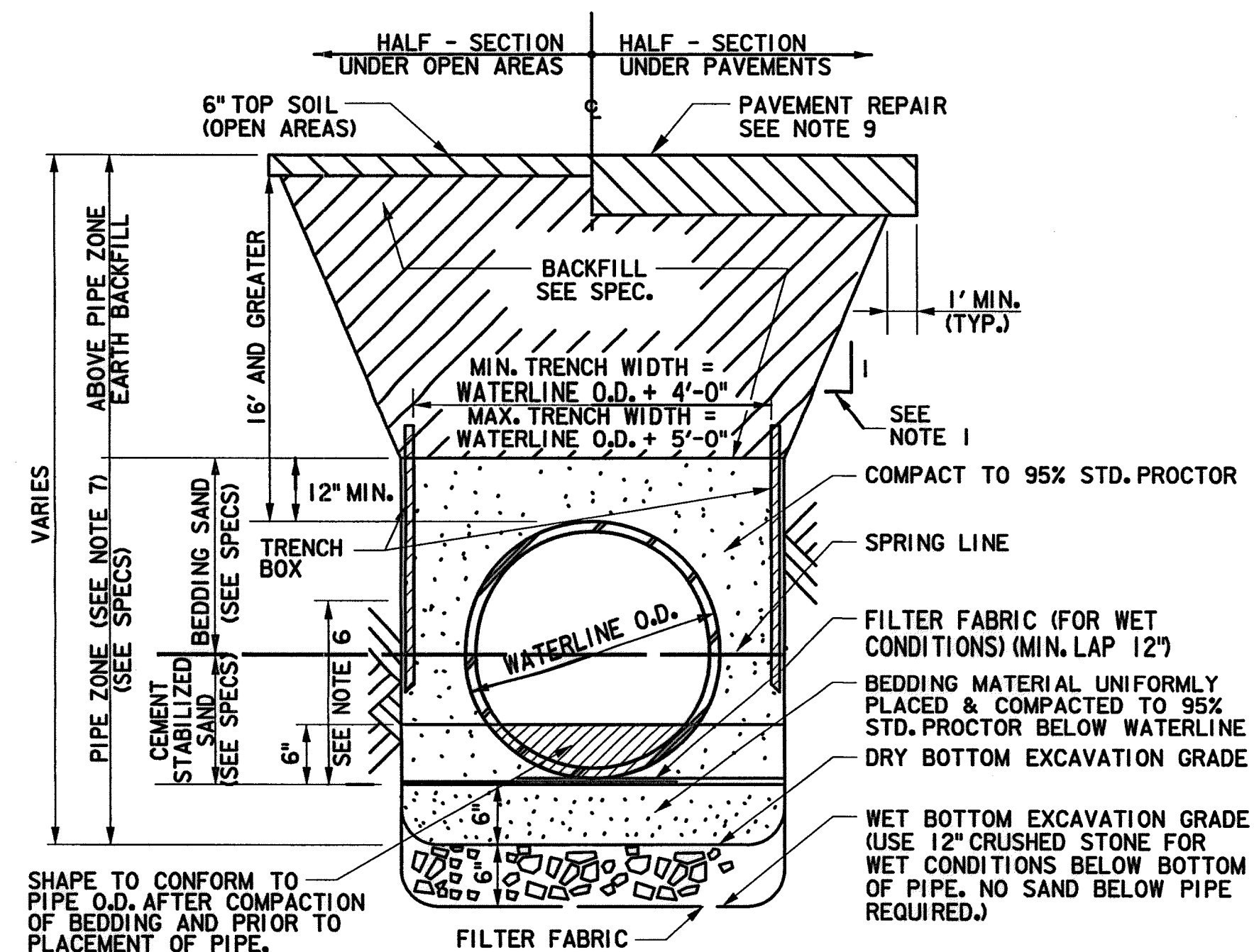
- SEE TRENCH SAFETY SYSTEM SPECIFICATIONS FOR MAXIMUM ALLOWABLE SLOPES.
- FOR WET BOTTOM EXCAVATION LIMITS OF CRUSHED STONE, EXTEND AS SHOWN.
- KEY CONCRETE TRENCH DAM MINIMUM OF 6 INCHES INTO TRENCH BOTTOM AND WALLS.
- TRENCH DAM MAY BE FORMED OR UNFORMED. ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FIELD, MEETING 6-INCH MINIMUM THICKNESS AND 6-INCH KEY DEPTH REQUIREMENTS.
- TRENCH DAM SHALL BE PLACED AT LEAST 5 FT. AWAY FROM ANY PIPELINE STRUCTURE (EACH SIDE). SEE SECTION 02317 FOR OTHER REQUIREMENTS.
- THIS PORTION OF PIPE EMBEDMENT ZONE MUST BE RECOMPACTED TO PROPER DENSITIES AFTER MOVING SUPPORT SYSTEM FORWARD.
- USE FILTER FABRIC AS A BOND BREAKER BETWEEN CEMENT STABILIZED SAND AND PIPE.
- FOR PAVEMENT REPAIR SEE DETAILS IN PAVEMENT SHEETS.



4 D.I.P. OVER PROPOSED WATER LINE

NTS  
NOTE:  
IF PERMITTED BY CITY ENGINEER, P.V.C. PIPE WITH PRESSURE RATING OF 250, DR18 MAY BE USED.

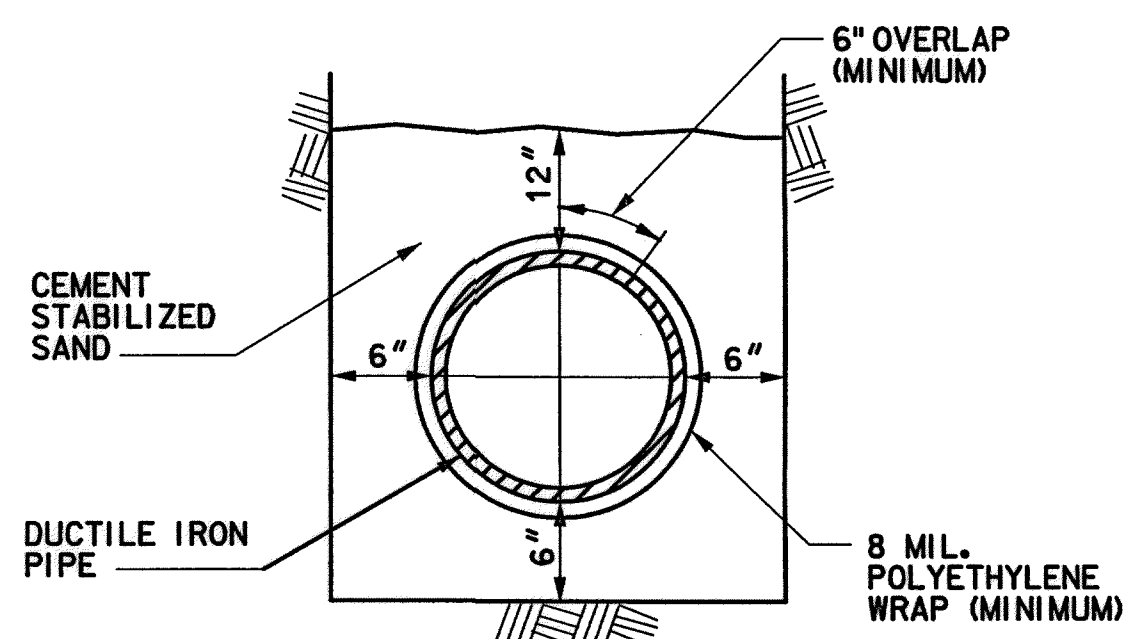
\*NOTE:  
DETAIL ALSO APPLIES IN CASES WHERE EXIST SAN SWR IS LOCATED BELOW PROPOSED WATER MAIN



2 EXCAVATION & BACKFILL DETAIL (FOR LARGE DIAMETER WATER MAIN WITH HEIGHT OF EARTH COVER GREATER THAN 16')

**NOTES:**

- SEE TRENCH SAFETY SYSTEM SPECIFICATIONS FOR MAXIMUM ALLOWABLE SLOPES.
- FOR WET BOTTOM EXCAVATION LIMITS OF CRUSHED STONE, EXTEND AS SHOWN.
- KEY CONCRETE TRENCH DAM MINIMUM OF 6 INCHES INTO TRENCH BOTTOM AND WALLS.
- TRENCH DAM MAY BE FORMED OR UNFORMED. ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FIELD, MEETING 6-INCH MINIMUM THICKNESS AND 6-INCH KEY DEPTH REQUIREMENTS.
- TRENCH DAM SHALL BE PLACED AT LEAST 5 FT. AWAY FROM ANY PIPELINE STRUCTURE (EACH SIDE). SEE SECTION 02317 FOR OTHER REQUIREMENTS.
- THIS PORTION OF PIPE EMBEDMENT ZONE MUST BE RECOMPACTED TO PROPER DENSITIES AFTER MOVING SUPPORT SYSTEM FORWARD.
- USE POLYETHYLENE WRAP AS A BOND BREAKER BETWEEN CEMENT STABILIZED SAND AND PIPE.
- ONLY REQUIRED FOR PCCP OR BAR-WRAPPED PIPE UNLESS OTHERWISE NOTED.
- FOR PAVEMENT REPAIR SEE DETAILS IN PAVEMENT SHEETS.



6 EMBEDMENT AND CORROSION PROTECTION FOR SANITARY SEWER DUCTILE IRON PIPE

N.T.S.

**NOTES:**

- FOLLOWING EXCAVATION OF TRENCH, PLACE A 6" LAYER OF CEMENT STAB. SAND AT BOTTOM OF TRENCH, LAY POLYETHYLENE WRAP IN TRENCH, AND LAY PIPE ON TOP OF WRAP. FOLD WRAP AROUND PIPE WITH A 6" OVERLAP (MIN.) AND TIE AROUND PIPE WITH HEAVY BINDER TWINE, OR EQUAL, ON 6" CENTERS. PROVIDE A 12" OVERLAP (MIN.) AND TIE WITH HEAVY BINDER TWINE END LAPS. PLACE ADDITIONAL CEMENT SAND UP TO 12" ABOVE.
- ALL DUCTILE IRON PIPE SHALL HAVE A POLYETHYLENE "WRAP" OF 8 MIL. THICKNESS (MINIMUM) EXCEPT AS NOTED BELOW.
- WHERE PIPE IS PLACED IN AN AUGER OR TUNNEL OR IN A CASING, PIPE IS TO HAVE A DOUBLE WRAP OF 16 MIL. POLYETHYLENE AND SHALL BE BONDED ON 12" CENTERS WITH 1/2" STAINLESS STEEL BANDS. END LAPS TO BE AS SPECIFIED FOR TRENCH SECTIONS.

CHRISTINE H. KIRBY, P.E.  
94776  
LICENSED PROFESSIONAL ENGINEER  
9/11/14  
Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

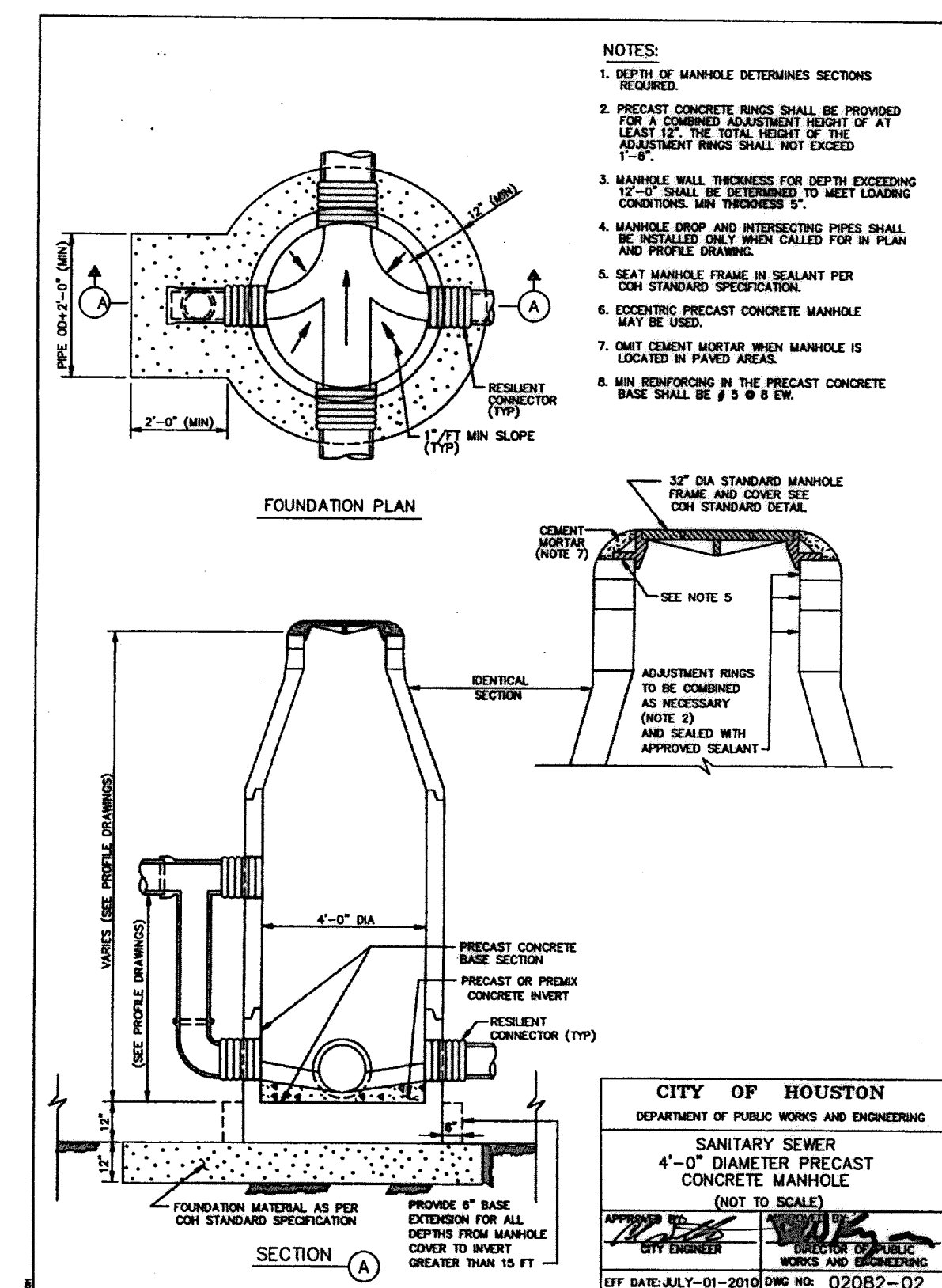
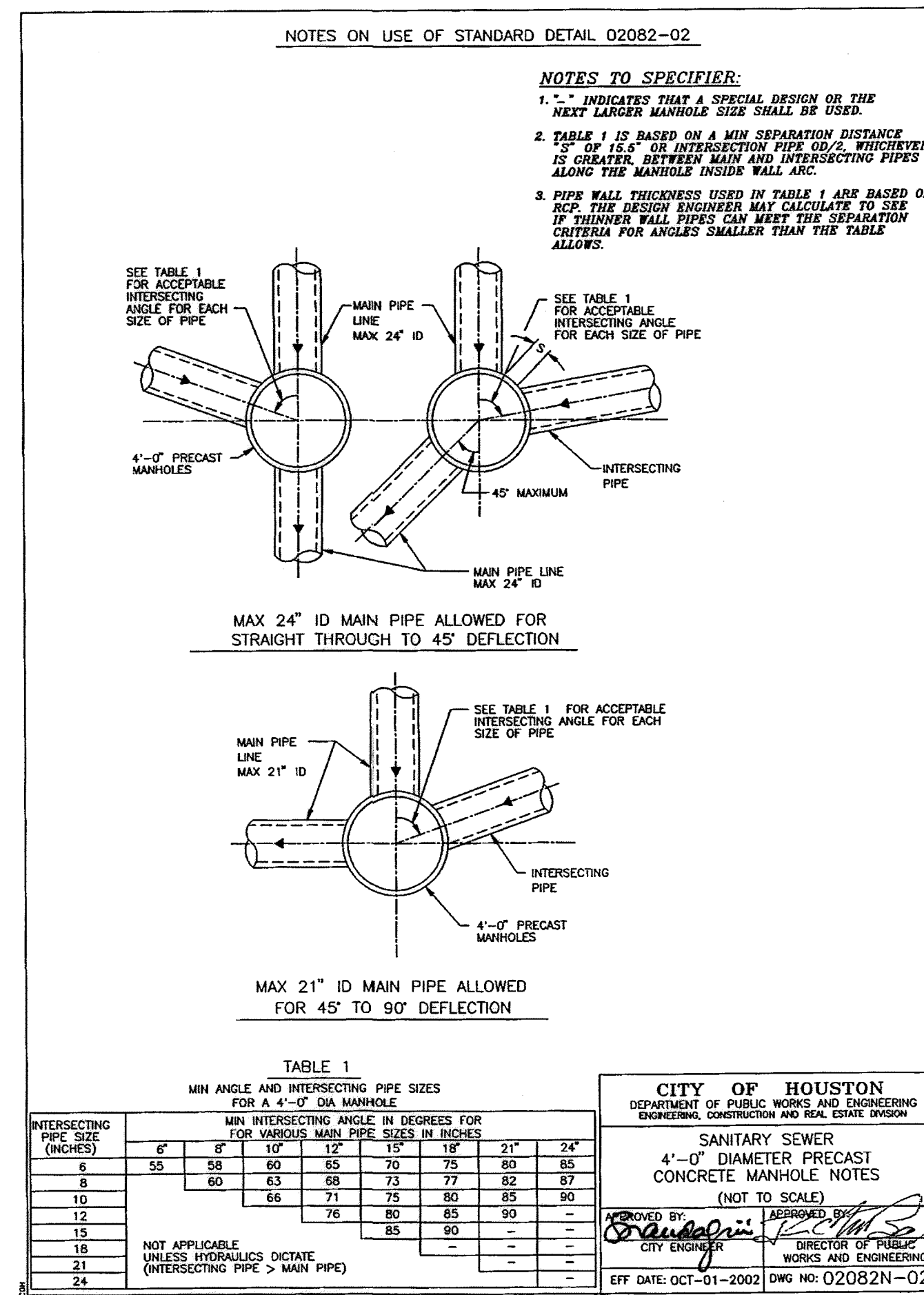
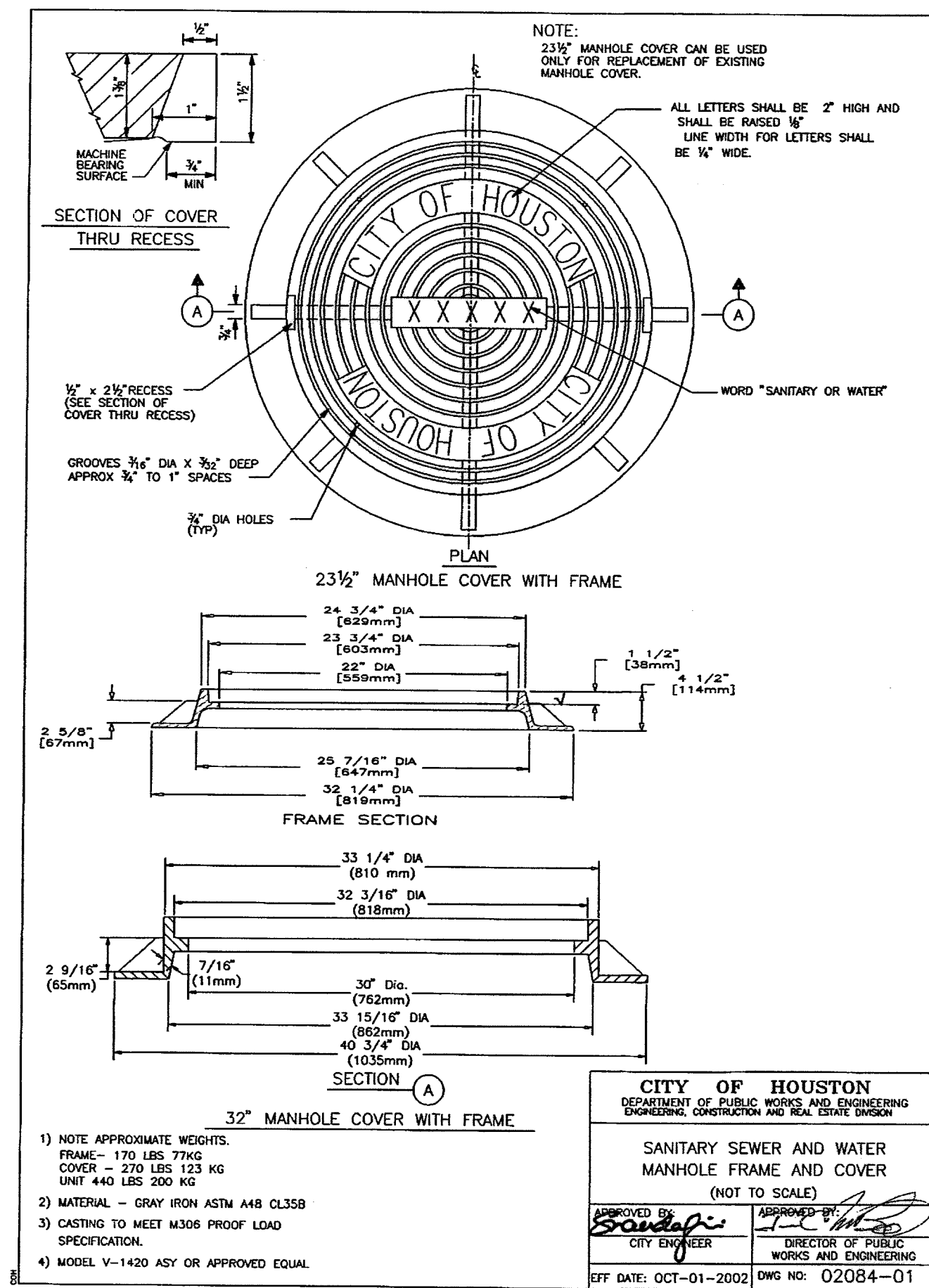
**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
**LARGE DIAMETER WATERLINE EXCAVATION, BEDDING, AND BACKFILL DETAILS**

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SW
FILE NO.:	FACILITY	
DRAWING SCALE:	CITY DWG NO.	
NOT TO SCALE		
SHEET:		
216	OF 226	





STATE OF TEXAS  
PROFESSIONAL ENGINEER  
CHRISTINE H. KIRBY, P.E.  
94776  
9/11/14  
Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3

STANDARD SANITARY SEWER DETAILS

SHEET 1 OF 2

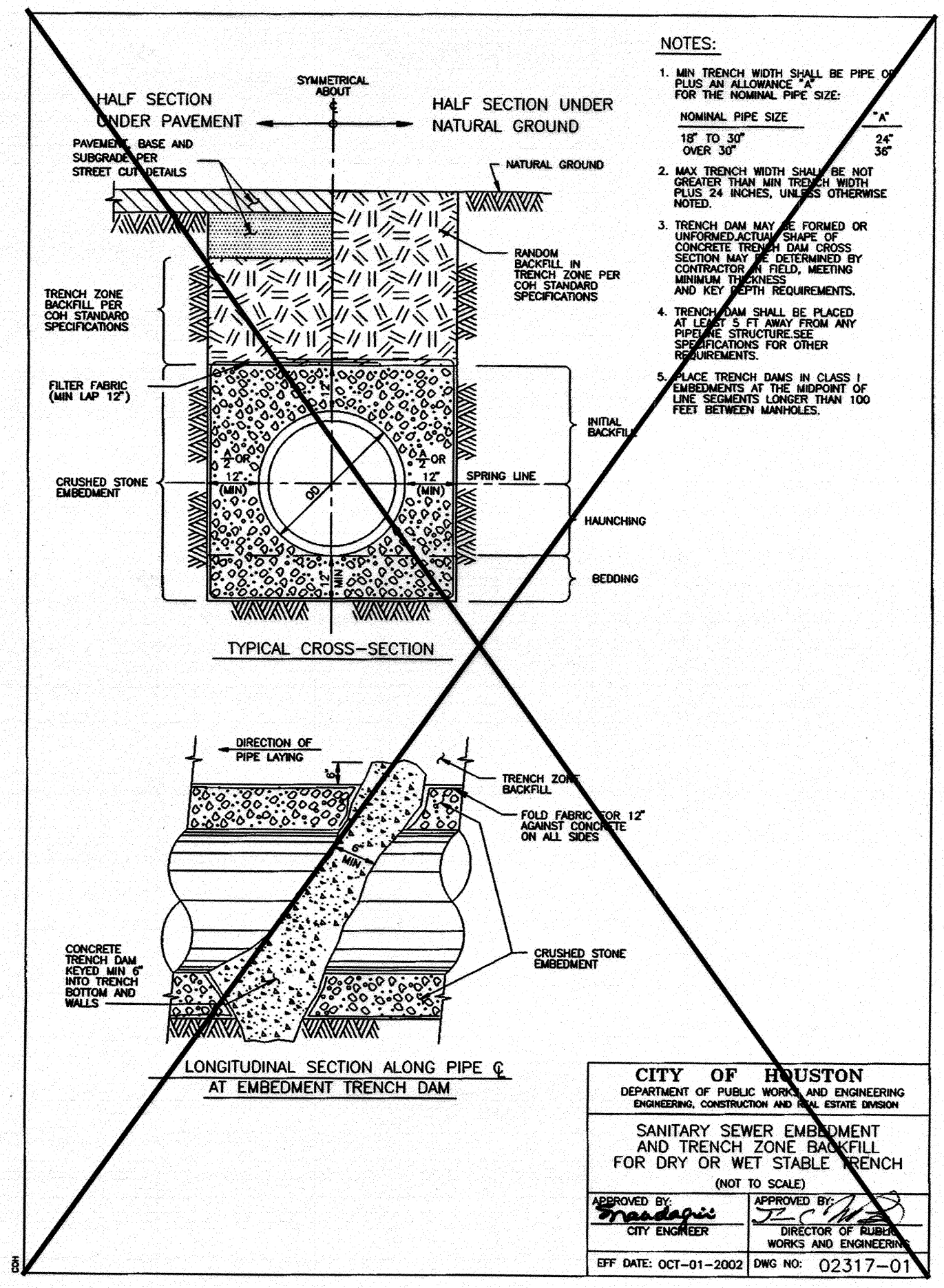
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO. :  
DRAWING SCALE: CITY DWG NO.  
NOT TO SCALE  
SHEET: 217 OF 226

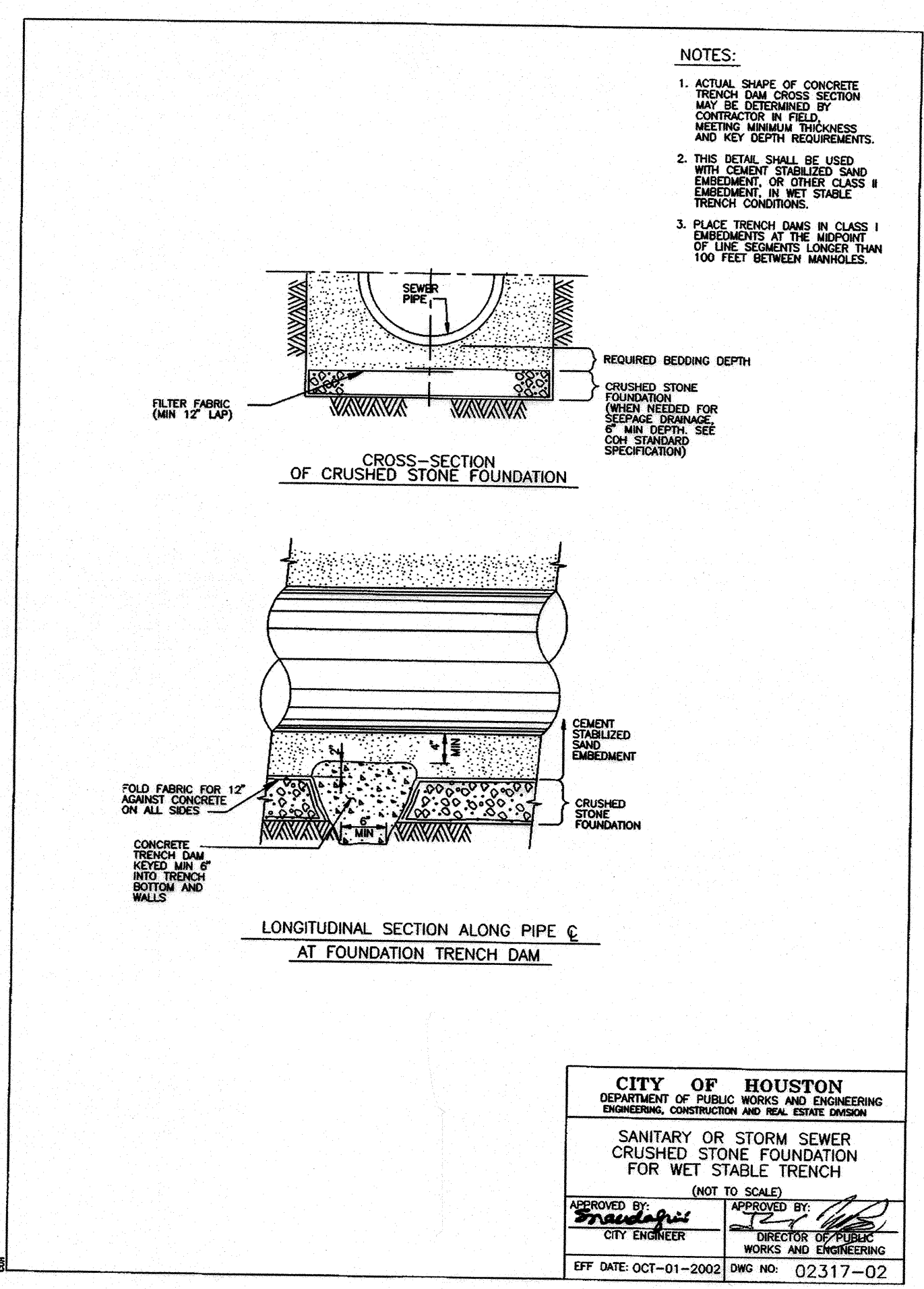
REVISIONS  
No. DATE

M:\c\h\14...  
2:17:34 PM  
01/28/2014



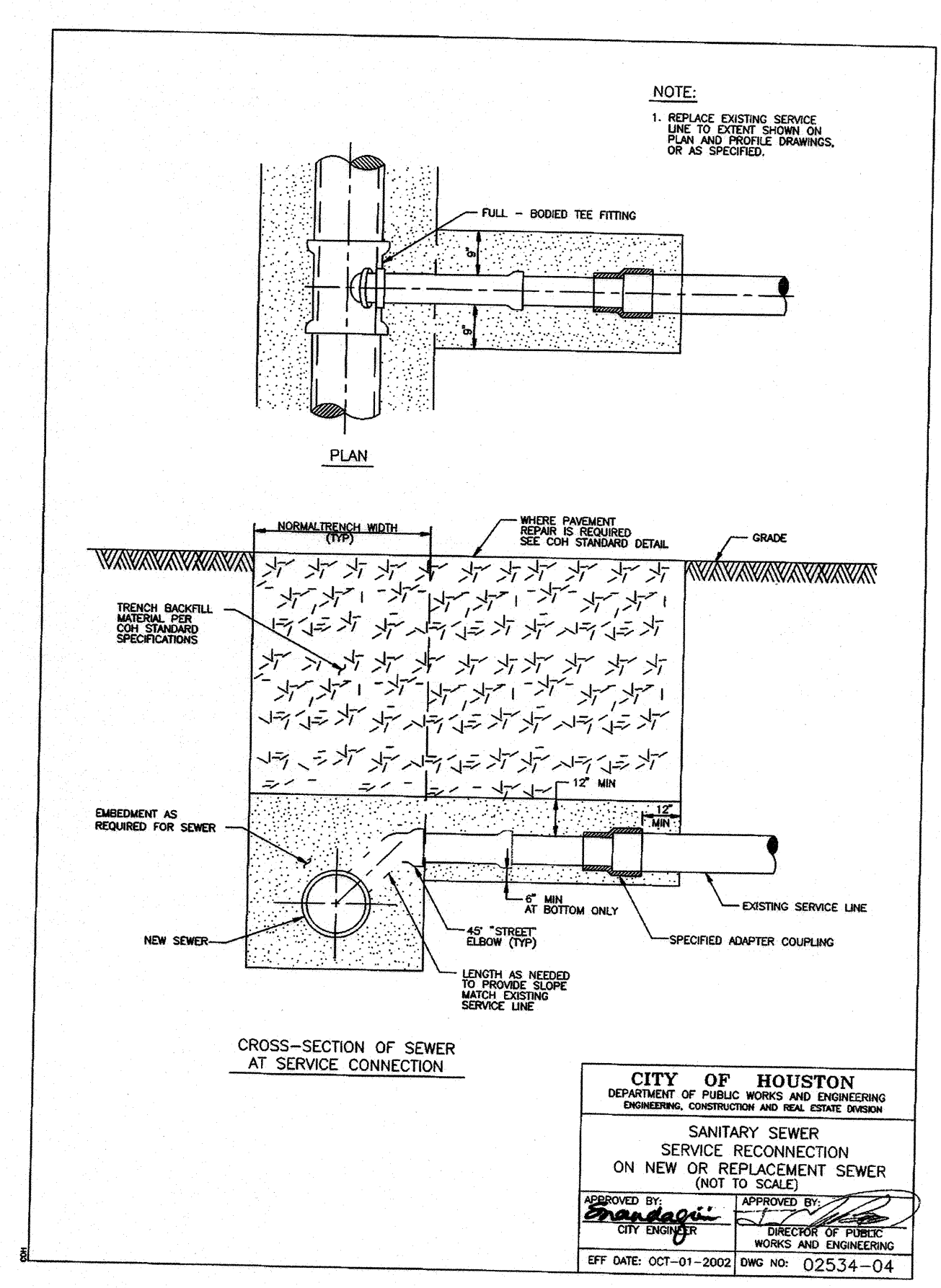
- NOTES:**
1. MIN TRENCH WIDTH SHALL BE PIPE O.D. PLUS 4\"/>

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION  
**SANITARY SEWER EMBEDMENT AND TRENCH ZONE BACKFILL FOR DRY OR WET STABLE TRENCH**  
 (NOT TO SCALE)  
 APPROVED BY: [Signature] CITY ENGINEER  
 APPROVED BY: [Signature] DIRECTOR OF PUBLIC WORKS AND ENGINEERING  
 EFF DATE: OCT-01-2002 DWG NO: 02317-01



- NOTES:**
1. ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FIELD. MEETING MINIMUM THICKNESS AND KEY DEPTH REQUIREMENTS.
  2. THIS DETAIL SHALL BE USED WITH CONCRETE STABILIZED SAND EMBEDMENT, OR OTHER CLASS II EMBEDMENT, IN WET STABLE TRENCH CONDITIONS.
  3. PLACE TRENCH DAMS IN CLASS I EMBEDMENTS AT THE SUPPORT OF LINE SEGMENTS LONGER THAN 100 FEET BETWEEN MANHOLES.

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION  
**SANITARY OR STORM SEWER CRUSHED STONE FOUNDATION FOR WET STABLE TRENCH**  
 (NOT TO SCALE)  
 APPROVED BY: [Signature] CITY ENGINEER  
 APPROVED BY: [Signature] DIRECTOR OF PUBLIC WORKS AND ENGINEERING  
 EFF DATE: OCT-01-2002 DWG NO: 02317-02



**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION  
**SANITARY SEWER SERVICE RECONNECTION ON NEW OR REPLACEMENT SEWER**  
 (NOT TO SCALE)  
 APPROVED BY: [Signature] CITY ENGINEER  
 APPROVED BY: [Signature] DIRECTOR OF PUBLIC WORKS AND ENGINEERING  
 EFF DATE: OCT-01-2002 DWG NO: 02534-04

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

**LUMPKIN ROAD**  
 N-T17000-0012-3  
**STANDARD SANITARY SEWER DETAILS**

SHEET 2 OF 2

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

FILE NO. 1: \_\_\_\_\_ FACILITY: \_\_\_\_\_

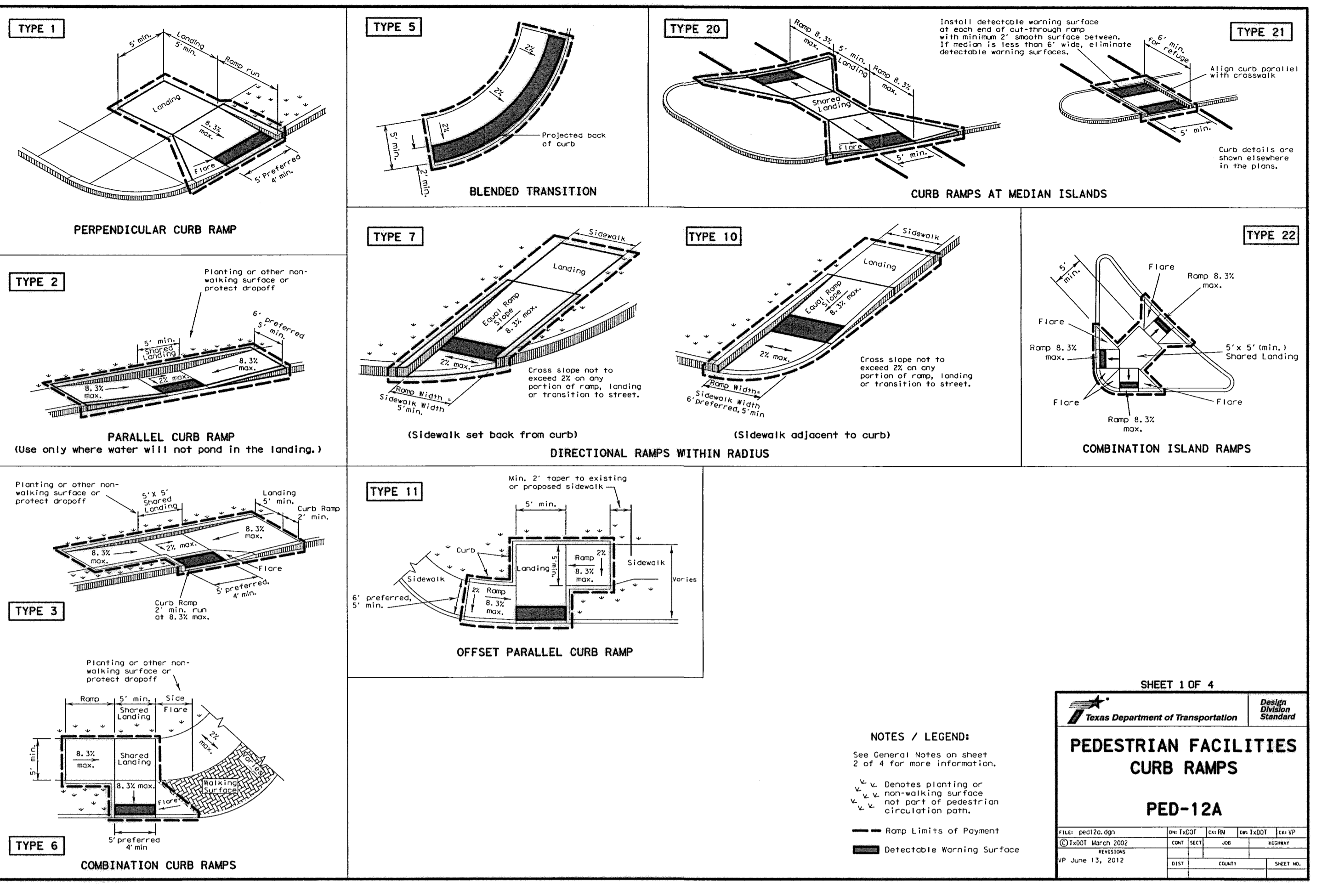
DRAWING SCALE: \_\_\_\_\_ CITY DWG NO. \_\_\_\_\_

NOT TO SCALE

SHEET: 218 OF 226

APP. \_\_\_\_\_  
 REVISIONS \_\_\_\_\_  
 No. \_\_\_\_\_ DATE \_\_\_\_\_  
 M:\Guthrie16  
 10-44-29 AM  
 02/08/2014  
 189-545-Sanitary-D1.s  
 02/08/2014  
 10-44-29 AM

DISCLAIMER: The use of this standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by the State of Texas or the Department of Transportation for the accuracy of any information or for the results of its use. The user is advised to obtain the latest edition of any standard or code of practice to which reference is made in this standard.



**NOTES / LEGEND:**  
 See General Notes on sheet 2 of 4 for more information.  
 P = Denotes planting or non-walking surface not part of pedestrian circulation path.  
 --- Ramp Limits of Payment  
 ■ Detectable Warning Surface

SHEET 1 OF 4

Texas Department of Transportation  
 Design Division Standard

**PEDESTRIAN FACILITIES CURB RAMPS**

**PED-12A**

FILE: ped12a.dgn  
 DATE: 03/07/2002  
 TIME: 10:00 AM  
 USER: jay  
 PLOT: 06/13/2012

DISCLAIMER: The use of this standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by the State of Texas or the Department of Transportation for the accuracy of any information or for the results of its use. The user is advised to obtain the latest edition of any standard or code of practice to which reference is made in this standard.

**General Notes**

**Curb Ramps**

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Lesser slopes that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 5' sidewalk width is desirable, where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5' x 5' passing areas at intervals not to exceed 200' are required.
4. Landings shall be 5' x 5' minimum with a maximum 2% slope in any direction.
5. Maneuvering space at the bottom of curb ramps shall be a minimum of 4' x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
6. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the current edition of the Texas Accessibility Standards (TAS) and 16 TAC 68.182.
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curb. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5' x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Handrails are not required on curb ramps. Provide curb ramps wherever an accessible route crosses (penetrates) a curb.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 Sidewalks.
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Provide a smooth transition where the curb ramps connect to the street.
16. Curb shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
17. Existing features that comply with TAS may remain in place unless otherwise shown on the plans.

**Detectable Warning Material**

18. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with Section 705 of the TAS. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
19. Detectable Warning Materials must meet TxDOT Departmental Materials Specification (DMS 425B) and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
20. Detectable warning surfaces must be slip resistant and not allow water to accumulate.
21. Detectable warning surfaces shall be a minimum of 24" in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
22. Detectable warning surfaces shall be located so that the edge nearest to the curb line is at the back of curb. Align the rows of domes to be perpendicular to the grade break between the ramp run and the street. Detectable warning surfaces may be curved along the corner radius.
23. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

**Detectable Warning Pavements**

24. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
25. Lay full-size units first followed by closure units consisting of at least 25 percent of a full unit. Cut detectable warning paver units using a power saw.

**Sidewalks**

26. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within one or more reach ranges specified in TAS 308.
27. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
28. Street grades and cross slopes shall be as shown elsewhere in the plans.
29. Changes in level greater than 1/4 inch are not permitted.
30. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway, where a continuous grade greater than 5% must be provided. Handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with TAS 505.
31. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
32. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts." Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
33. Sidewalk details are shown elsewhere in the plans.

**Typical placement of detectable warning surface on sloping ramp run.**

**PERPENDICULAR CURB RAMP**

**DIRECTIONAL CURB RAMP**

**PARALLEL CURB RAMP**

**SECTION: CURB RAMP AT DETECTABLE WARNING**

**DETECTABLE WARNINGS**

SHEET 2 OF 4

Texas Department of Transportation  
 Design Division Standard

**PEDESTRIAN FACILITIES CURB RAMPS**

**PED-12A**

FILE: ped12a.dgn  
 DATE: 03/07/2002  
 TIME: 10:00 AM  
 USER: jay  
 PLOT: 06/13/2012

STATE OF TEXAS  
 9-15-2011  
 MUHAMMAD M. ALI, P.E.  
 LICENSED PROFESSIONAL ENGINEER

Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 TxDOT STANDARDS

SHEET 1 OF 7

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWD

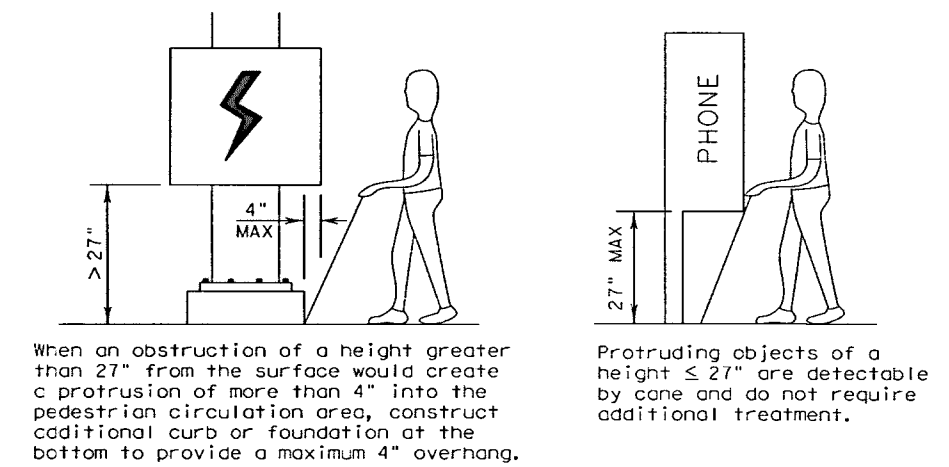
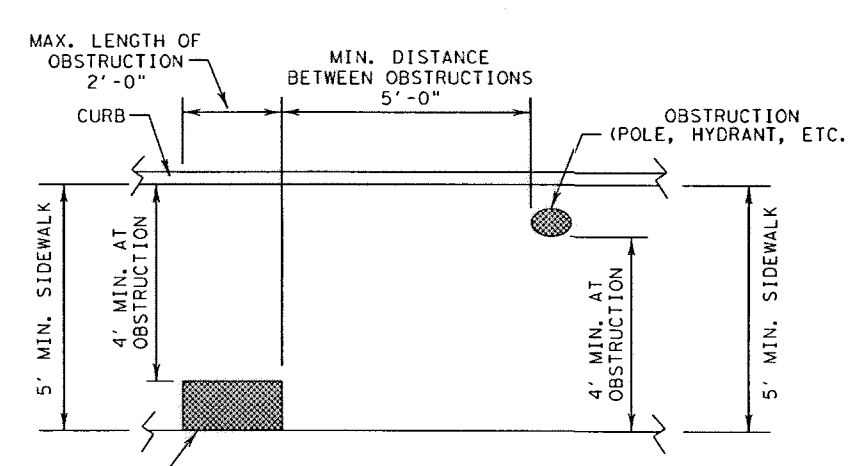
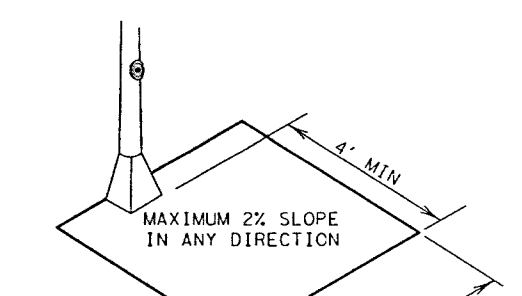
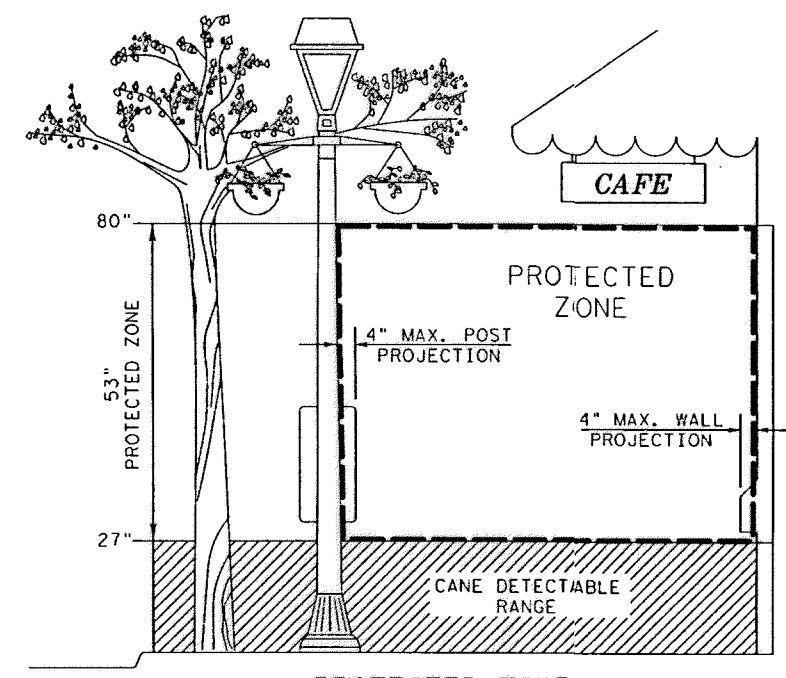
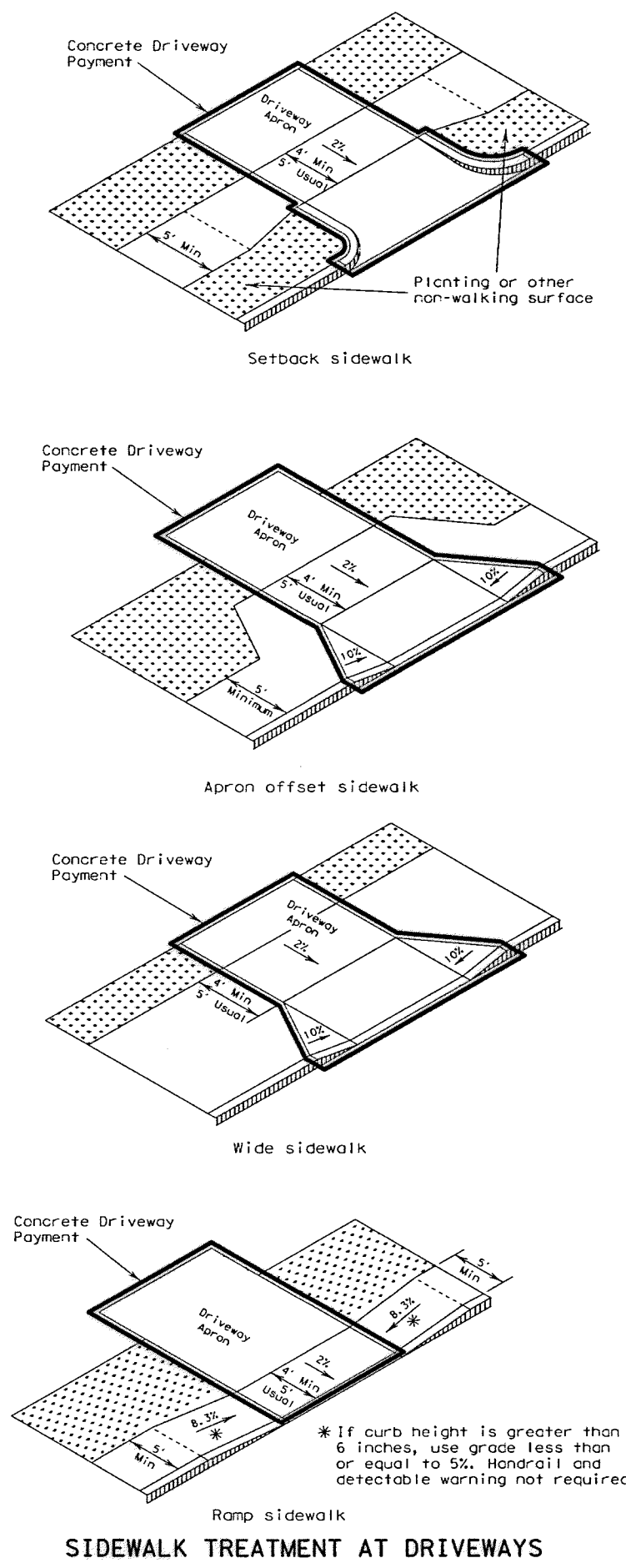
FILE NO. : FACILITY

DRAWING SCALE: CITY DWG NO.

NOT TO SCALE

SHEET: 219 OF 226

DISCLAIMER: The use of this standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by the State of Texas or any other authority for the accuracy, reliability, or completeness of the information contained herein. The user assumes all liability for any damage or loss resulting from the use of this standard.



**PEDESTRIAN FACILITIES CURB RAMPS**

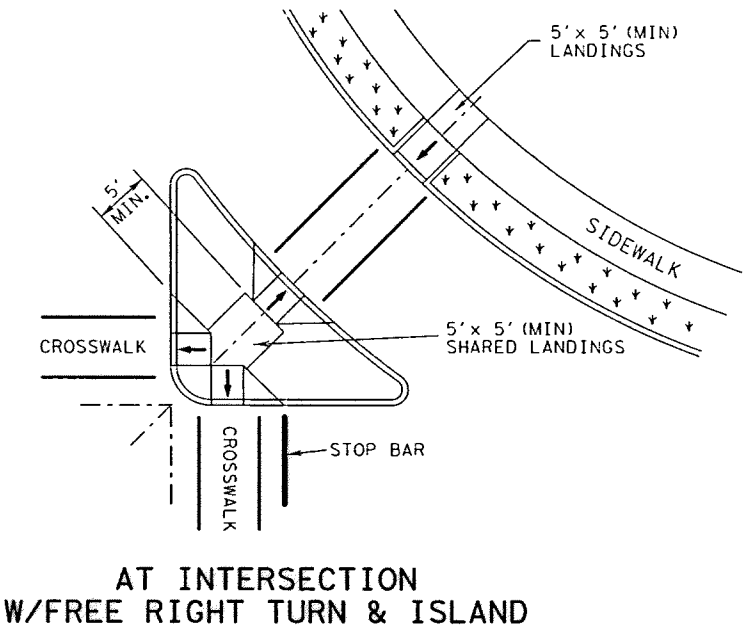
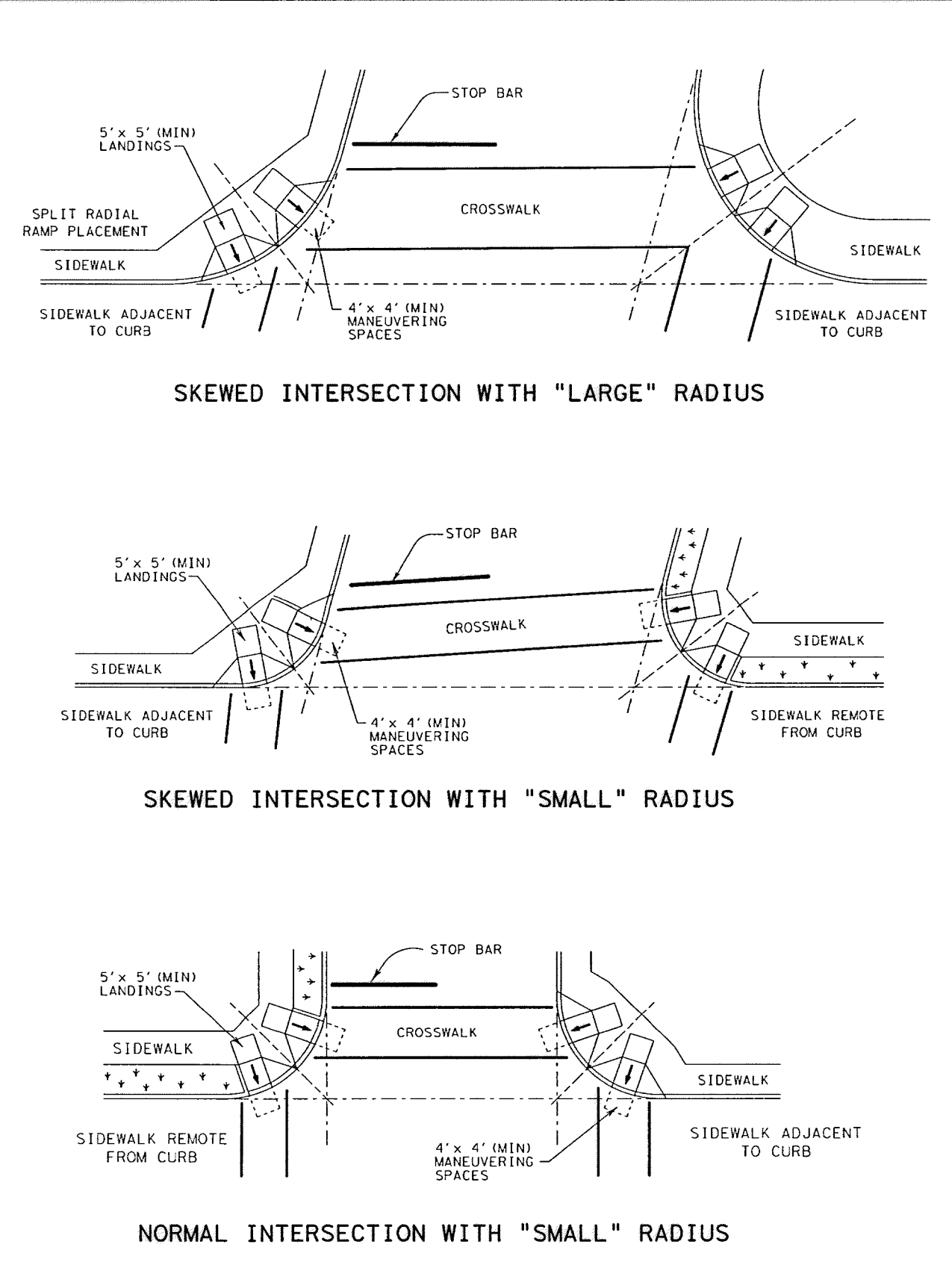
PEL-12A

SHEET 3 OF 4

Texas Department of Transportation Design Division Standard

FILE: PED12A.dgn	DATE: 03/13/2012	TIME: 10:00	USER: JAV
PROJECT: March 2012	DATE: 03/13/2012	TIME: 10:00	USER: JAV
VP: June 13, 2012	DATE: 03/13/2012	TIME: 10:00	USER: JAV

DISCLAIMER: The use of this standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by the State of Texas or any other authority for the accuracy, reliability, or completeness of the information contained herein. The user assumes all liability for any damage or loss resulting from the use of this standard.



SHEET 4 OF 4

Texas Department of Transportation Design Division Standard

**PEDESTRIAN FACILITIES CURB RAMPS**

PEL-12A

FILE: PED12A.dgn	DATE: 03/13/2012	TIME: 10:00	USER: JAV
PROJECT: March 2012	DATE: 03/13/2012	TIME: 10:00	USER: JAV
VP: June 13, 2012	DATE: 03/13/2012	TIME: 10:00	USER: JAV

**TYPICAL CROSSING LAYOUTS**

9-15-2014

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
TxDOT STANDARDS

SHEET 2 OF 7

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SW

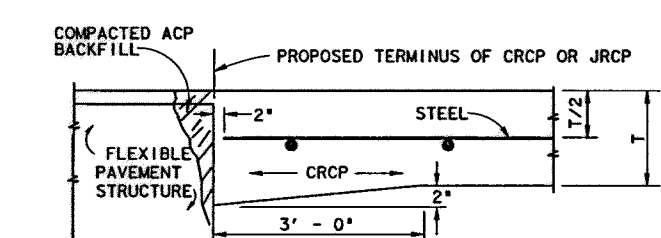
FILE NO.:

DRAWING SCALE:

NOT TO SCALE

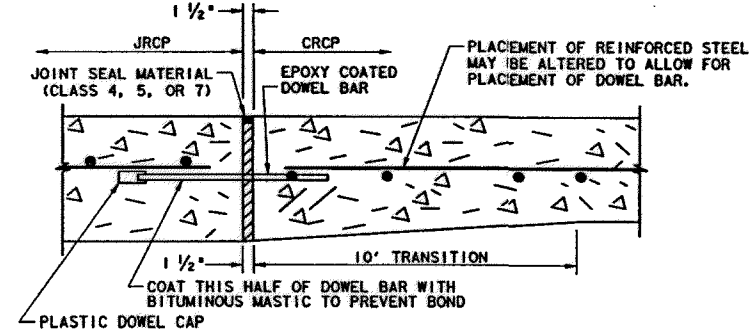
SHEET: 220 OF 226

APP. REVISIONS No. DATE No. DATE  
 AUTH. MUGuthrie  
 7:52:47 AM  
 9/4/2014  
 C:\projects\se\Documents\Projects\130-10384-001\4-9-Product\on\4-01-Drawings\Standards\TxDOT\T2-PEDS.dgn



NOTE:  
ADDITIONAL CONCRETE FOR THICKENED EDGE IS INCIDENTAL TO VARIOUS BID ITEMS. BACKFILL DISTURBED MATERIAL IN THE FLEXIBLE PAVEMENT WITH ACP. THIS ACP IS INCIDENTAL TO VARIOUS BID ITEMS.

**JUNCTURE A & B - CRCP OR JRCP WITH FLEXIBLE TYPE PAVEMENT STRUCTURE**

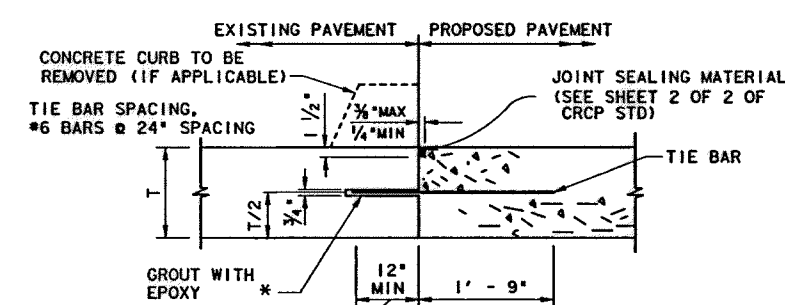


FOR DETAILS NOT SHOWN, SEE TRANSVERSE EXPANSION JOINT DETAILS ELSEWHERE IN PLANS.

**DETAIL "B" - DOWEL ASSEMBLY AT EXPANSION JOINT**

DOWEL BAR DATA	6"-7.5"	8"-10"	10.5"-15"
SLAB THICKNESS (T)	6"-7.5"	8"-10"	10.5"-15"
DOWEL SIZE	1"	1 1/4"	1 1/2"
DOWEL LENGTH	18"	20"	22"
DOWEL BAR SPACING	12"	12"	12"

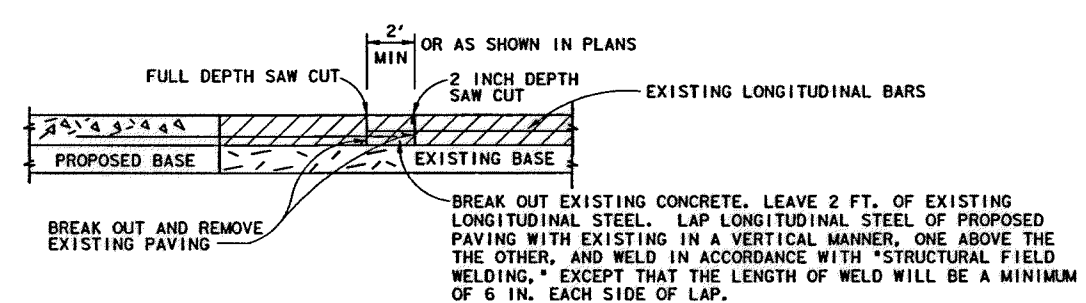
TABLE A - DOWEL BAR DATA



AS DIRECTED BY ENGINEER

**JUNCTURE D - TYPICAL CONNECTION TO EXISTING CONCRETE**

\*FOR EPOXY TYPE SEE ITEM 361.



**JUNCTURE F - "BREAK BACK" CONCRETE CRCP WITH CRCP OR JRCP WITH JRCP**

**GENERAL NOTES**

- FOR FURTHER INFORMATION REGARDING PLACING CONCRETE AND REINFORCEMENT, REFER TO THE GOVERNING SPECIFICATION FOR CONCRETE PAVEMENT.
- THE DESIGN REQUIREMENTS FOR THE PAVEMENT STRUCTURE, I.E., BAR SPACING, BAR SIZE LAP REQUIREMENTS, ETC., ARE SHOWN ON THE APPROPRIATE PAVEMENT DESIGN DETAIL.
- SLEEPER SLAB AND ADDITIONAL REINFORCING REQUIRED ON THIS DRAWING ARE INCIDENTAL TO THE VARIOUS BID ITEMS.
- USE THE SIZE, SPACING, AND LENGTH OF DOWEL BARS SHOWN IN TABLE "A".
- WHERE THERE WILL BE A JUNCTURE AND ADDITIONAL JRCP PAVING WILL BE PLACED AT A FUTURE DATE, MULTIPLE PIECE DOWEL BARS WILL BE PERMITTED AT THE JUNCTURE. PROVIDE MULTIPLE PIECE DOWEL BAR ASSEMBLIES WITH A MINIMUM ULTIMATE TENSILE STRENGTH OF 60.0 KIPS AND THAT HAVE SMOOTH EPOXY COATED BARS. ENSURE THE MULTIPLE PIECE DOWEL BAR ASSEMBLIES HAVE STOP TYPE COUPLINGS AND HAVE HAVING ROLLED THREADS ON THE BARS. DISMANTLE THE BAR AND FIT THE COUPLING PORTION USED IN CONSTRUCTION, WITH A PLASTIC CAP. FURNISH THE REMAINING PORTION OF THE BAR TO THE ENGINEER.
- WHERE THE PAVING IS CRCP AND A RAMP COMPOSED OF A FLEXIBLE PAVEMENT WILL BE USED AT THE JUNCTURE UNTIL FUTURE PAVING IS CONSTRUCTED, MULTIPLE PIECE TIE BARS MAY BE USED IF PERMITTED BY THE ENGINEER. IF USED, ENSURE THE MULTIPLE PIECE TIE BAR ASSEMBLIES HAVE STOP TYPE COUPLINGS AND ROLLED THREADS ON THE BARS. FURNISH MULTIPLE PIECE TIE BAR ASSEMBLIES THAT DEVELOP A MINIMUM ULTIMATE TENSILE STRENGTH EQUAL TO 1.25 TIMES THE YIELD STRENGTH OF THE TRANSVERSE BARS BEING JOINED. FOR TIE BARS, USE DEFORMED REINFORCING BARS. TIE BAR ASSEMBLIES MADE FROM STEELS OTHER THAN ASTM GRADE 60 AND WITH DEFORMATIONS OTHER THAN ASTM STD. MAY BE USED PROVIDED THEY PROVE SATISFACTORY TO THE ENGINEER AND ARE IN EVERY RESPECT THE EQUAL TO THE ASSEMBLIES SPECIFIED. LABORATORY TESTING OF THE PROPOSED ASSEMBLIES, AT THE CONTRACTOR'S EXPENSE, MAY BE REQUIRED. LAP AND WELD ONE PORTION OF THE TIE BAR ASSEMBLY TO EACH LONGITUDINAL BAR IN ACCORDANCE WITH THE ITEM "STRUCTURAL FIELD WELDING" AND THE OTHER PORTION INTO THE COUPLING PRIOR TO PAVING. ENSURE MULTIPLE PIECE TIE BAR LENGTHS CONFORM TO THE TIE BAR LENGTHS SHOWN ELSEWHERE IN THE PLANS. ADDITIONAL "SHEAR STEEL" WILL ALSO BE REQUIRED AND MAY BE USED WITH MULTIPLE PIECE ASSEMBLIES AS PREVIOUSLY DESCRIBED. USE ADDITIONAL STEEL BARS OF EQUAL DIAMETER AT A SPACING DOUBLE THAT OF THE LONGITUDINAL STEEL AND ENSURE THE LENGTH IS 66 TIMES THE TIE BAR DIAMETER.
- DO NOT SHEAR CUT DOWEL BARS.
- ENSURE DOWEL BAR EPOXY COATING CONFORMS TO ARTICLE 440.2.F., "EPOXY COATING".
- REPLACE ANY BENT LONGITUDINAL REINFORCING, IF THERE IS NOT SUFFICIENT EXPOSED REINFORCING TO PROVIDE A MINIMUM OF A 33 TIMES BAR DIAMETER LAP. REMOVE THE EXISTING PAVEMENT AND SUFFICIENTLY EXPOSE THE EXISTING REINFORCING TO PROVIDE A 33 TIMES BAR DIAMETER LAP. REPLACE ANY SHEAR BARS THAT ARE DISTURBED BY DRILLING AND GROUTING AS REQUIRED BY NOTE 12 BELOW. PERFORM THIS CORRECTIVE ACTION AT NO EXPENSE TO THE DEPARTMENT.
- TIE BARS AND DOWEL BARS OMITTED, LOST, OR DAMAGED SHALL BE REPAIRED BY DRILLING AND EPOXY GROUTING AT NO EXPENSE TO THE DEPARTMENT.
- JUNCTURES A & B ARE ONLY SUITABLE FOR MINOR STREETS WITH LOW TRAFFIC VOLUMES.
- FURNISH ADDITIONAL SHEAR BARS (DIAMETER "D") OF THE SAME SIZE AS LONGITUDINAL BARS AND SPACE THEM MIDWAY BETWEEN ALTERNATE LONGITUDINAL BARS ALONG THE TRANSVERSE CONSTRUCTION JOINT FORMED AT THE LEAVE-OUT.

**LEGEND**

ACP - ASPHALT CONCRETE PAVEMENT  
CRCP - CONTINUOUSLY REINFORCED CONCRETE PAVEMENT  
JRCP - JOINTED REINFORCED CONCRETE PAVEMENT  
T - THICKNESS

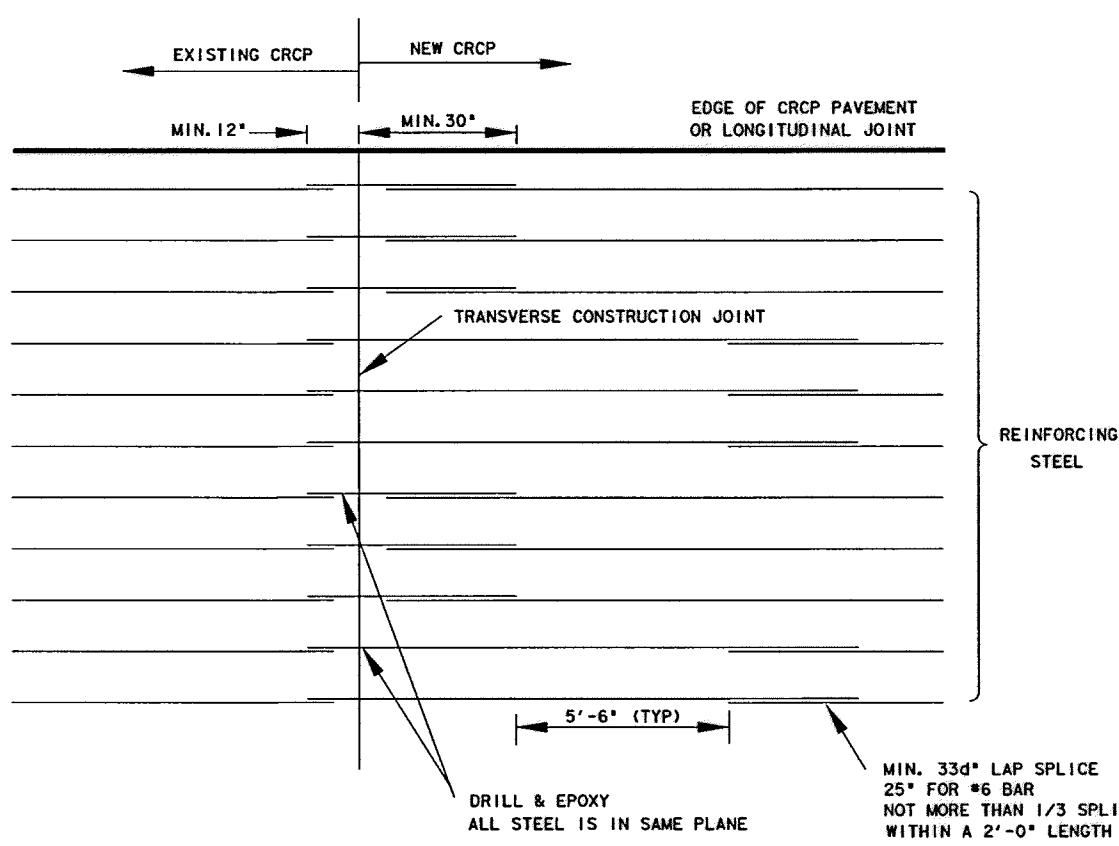
SHEET 1 OF 2

Texas Department of Transportation  
Houston District

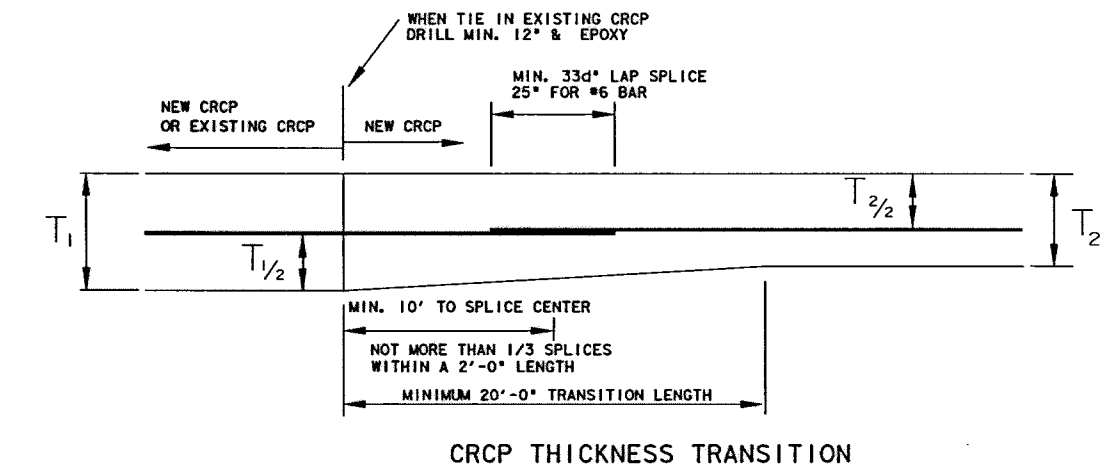
**CONCRETE PAVEMENT JUNCTURES**

CPJ

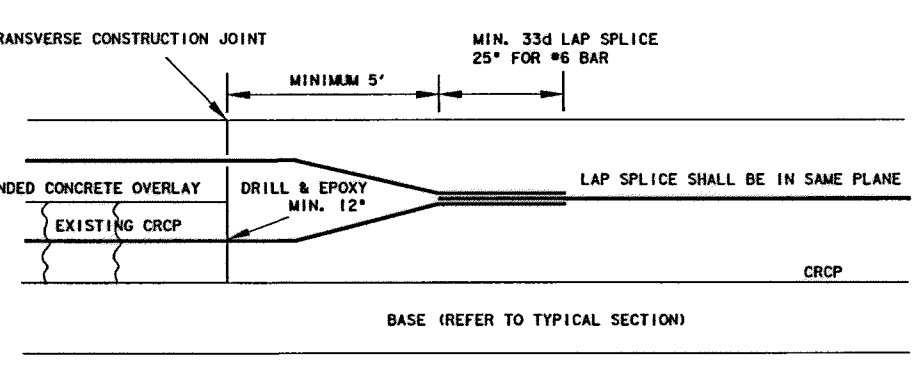
FILED: ST08-5.dgn	DN	EX	DN	EX
11/01/07 DEC. 2009	DIST	TRD REG	PROJECT NO.	SHEET
REVISED 4/2008	HOU	6		
	COUNTY	CONTROL	SECT	JOB
				HIGHWAY



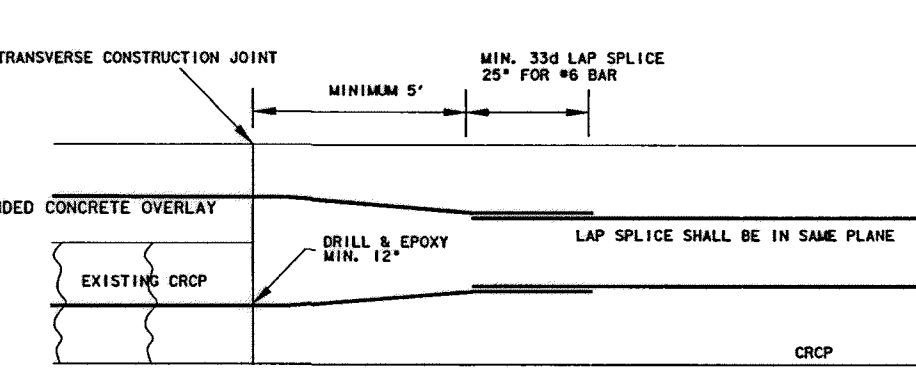
**EXISTING CRCP TO NEW CRCP**



**CRCP THICKNESS TRANSITION**



**CRCP BONDED OVERLAY TO CRCP TRANSITION (ONE LAYER STEEL)**



**CRCP BONDED OVERLAY TO CRCP TRANSITION (TWO LAYER STEEL)**

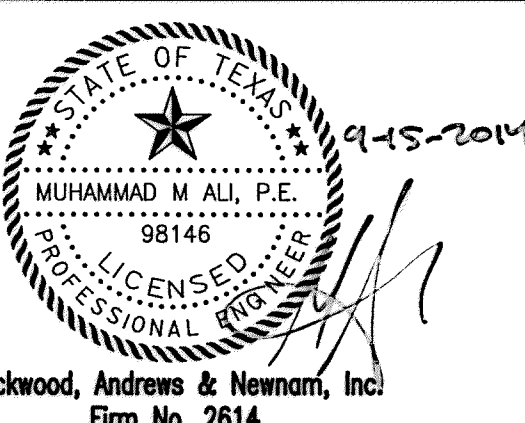
Texas Department of Transportation  
Houston District

**CONCRETE PAVEMENT JUNCTURES**

CPJ

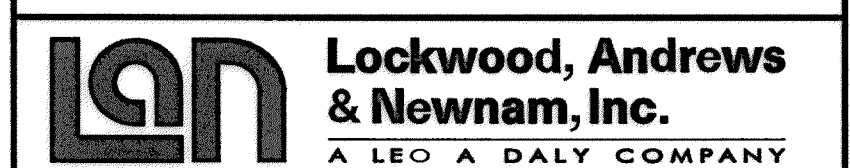
FILED: ST08-5.dgn	DN	EX	DN	EX
11/01/07 DEC. 2009	DIST	TRD REG	PROJECT NO.	SHEET
REVISED 4/2008	HOU	6		
	COUNTY	CONTROL	SECT	JOB
				HIGHWAY

SHEET 2 OF 2



Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**



LUMPKIN ROAD  
N-T17000-0012-3  
TxDOT STANDARDS

SHEET 3 OF 7

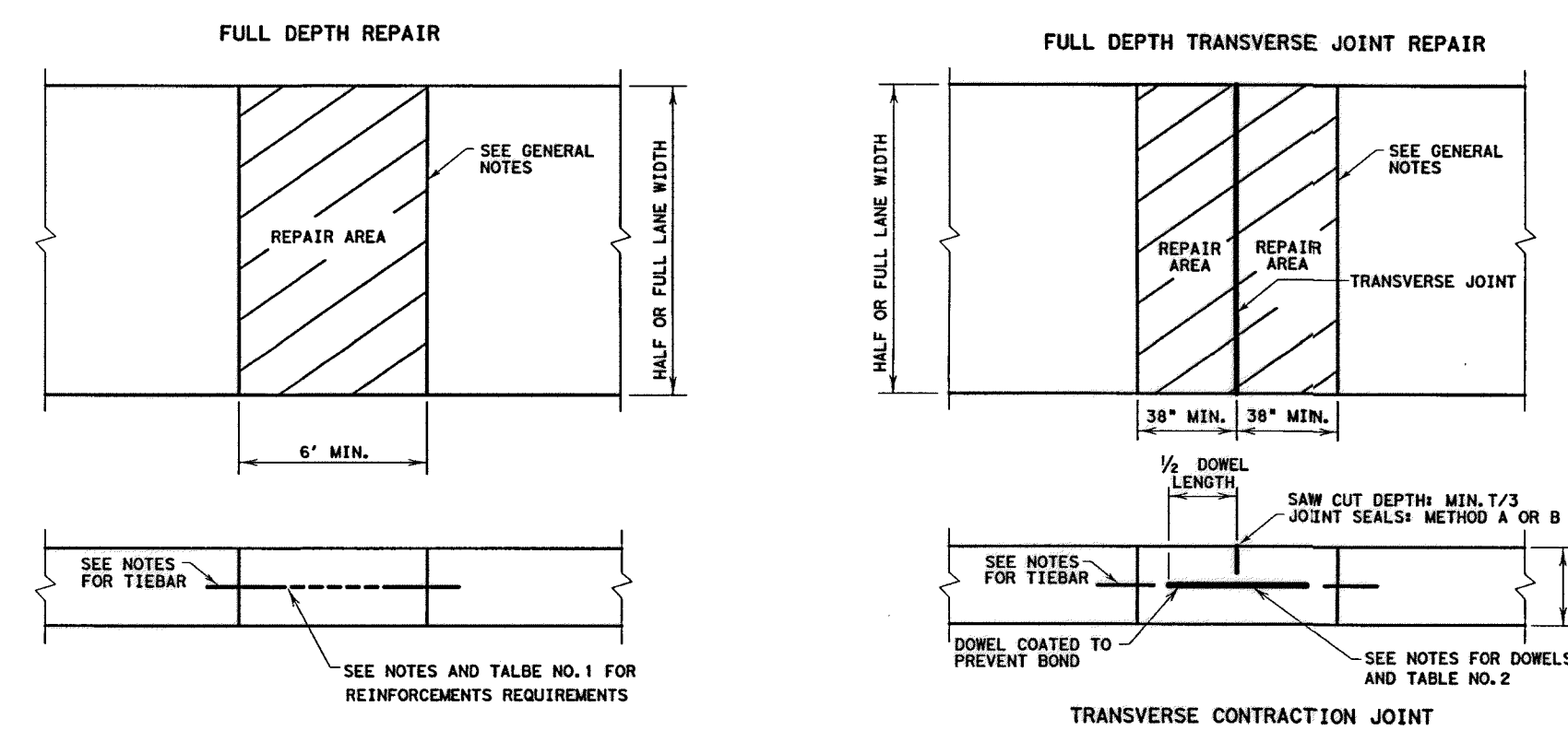
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWG

FILE NO.:	FACILITY
DRAWING SCALE:	CITY DWG NO.
NOT TO SCALE	
SHEET:	
221	OF 226

APP. REVISIONS No. DATE 7-571.12 AM 9/4/2014 MUGuthrie 9/4/2014

DISCLAIMER: The use of this record is governed by the "Record Engineering Practice Act" and the "Professional Engineers Act". No warranty of any kind is made by the State of Texas or the Board of Engineering Examiners for the accuracy or completeness of the information contained herein. The user of this record is responsible for the accuracy and completeness of the information contained herein and for the results of any action taken thereon.



**REINFORCEMENTS REQUIREMENTS**

REINFORCING STEEL SHALL BE #6 DEFORMED STEEL BARS CONFORMING TO ASTM A 615 (GRADE 60) OR ASTM A 996 (GRADE 60).

R1. THE STEEL SPACING FOR CONTINUOUSLY REINFORCED CONCRETE PAVEMENT (CRCP) AND JOINTED REINFORCED CONCRETE PAVEMENT (JRCP) SHALL BE REINFORCED AS SHOWN IN TABLE NO. 1.

R2. REINFORCING BARS SHALL BE PLACED IN ONE LAYER AND SHALL BE TIED TO THE TIEBARS.

R3. THE LENGTH OF THE REINFORCING BAR SHALL BE THE LENGTH OR WIDTH OF THE REPAIR AREA MINUS 2 INCHES. THE END OF THE BAR SHALL BE PLACED WITHIN 1 INCH FROM THE REPAIR EDGE.

**TIEBARS FOR REPAIR AREAS**

T1. TIEBARS SHALL BE PLACED AT APPROXIMATELY THE MID-DEPTH OF SLAB. THE BOTTOM OF THE HOLES DRILLED FOR THE LONGITUDINAL BARS SHALL BE AT MID-DEPTH AND THE TOP OF THE HOLES DRILLED FOR THE TRANSVERSE BARS SHALL BE AT MID-DEPTH. MID-DEPTH WILL BE ESTABLISHED BY MEASURING FROM THE TOP OF THE SLAB DOWN. THE THICKNESS OF THE CONCRETE SLAB WILL BE DEFINED BY THE PLANS OR THE ENGINEER.

T2. THE BAR SIZE AND SPACING OF TIEBARS ARE SHOWN IN TABLE NO. 1.

T3. THE MINIMUM LENGTH OF TIEBARS EXTENDED INTO THE REPAIR AREA SHOULD BE 25 INCHES FOR A #6 BAR.

T4. THE TIEBAR SHALL BE GROUDED INTO THE EXISTING CONCRETE A MINIMUM OF 12 INCHES. BEFORE REPAIR WORK, DEMONSTRATE THAT THE BOND STRENGTH OF THE EPOXY-GROUTED TIEBARS MEETS THE REQUIREMENTS OF PULL-OUT TEST SPECIFIED IN ITEM 361.

T5. MULTIPLE PIECE TIEBARS SHALL BE USED WHEN THE REPAIR AREA MUST BE PLACED IN TWO STAGES DUE TO SEQUENCE OF CONSTRUCTION.

**DOWELS FOR TRANSVERSE JOINT REPAIRS**

D1. SMOOTH DOWEL BARS SHALL BE DELIVERED TO THE JOBS SITE IN PREFABRICATED DOWEL ASSEMBLIES. THE ENTIRE DOWEL BAR SHALL BE COATED WITH A MATERIAL WHICH WILL PREVENT BONDING TO THE CONCRETE.

D2. THE SIZE AND SPACING OF DOWEL BARS SHALL BE AS SHOWN IN TABLE NO. 2.

D3. PLACEMENT OF TIEBARS AND OTHER REINFORCING STEEL SHALL BE STOPPED APPROXIMATELY 4" FROM THE DOWEL BAR ASSEMBLY.

D4. DOWEL BAR PLACEMENT SHALL MEET THE REQUIREMENTS OF ITEM 360, "CONCRETE PAVEMENT."

**GENERAL NOTES:**

- ITEM 361, "FULL-DEPTH REPAIR OF CONCRETE PAVEMENT," SHALL GOVERN FOR THIS WORK. THE FOLLOWING SPECIFICATIONS ARE REFERENCED IN ITEM 361:
  - ITEM 360, "CONCRETE PAVEMENT"
  - ITEM 421, "HYDRAULIC CEMENT CONCRETE"
  - ITEM 438, "CLEANING AND SEALING JOINTS AND CRACKS (CRIC PAVEMENT AND BRIDGE DECKS)"
  - ITEM 440, "REINFORCING STEEL"
  - DMS-4050, "HYDRAULIC CEMENT CURING MATERIALS AND EVAPORATION RETARDANTS"
  - DMS-6100, "EPOXIES AND ADHESIVES"
  - DMS-6310, "JOINT SEALANTS AND FILLERS"
- FULL DEPTH SAW CUTS SHALL BE MADE AROUND THE PERIMETER OF THE AREA TO BE REPAIRED. THE CUT SHALL BE MADE AT A RIGHT ANGLE TO THE PAVEMENT EDGE AND TO THE CENTER LINE OF THE PAVEMENT. LONGITUDINAL FULL DEPTH SAW CUTS SHALL BE AT EXISTING LONGITUDINAL JOINTS.
- ADDITIONAL SAW CUTS MAY BE REQUIRED WITHIN THE AREA OF THE REPAIR TO FACILITATE REMOVAL OF THE CONCRETE OR TO ALLEVIATE BINDING OF THE FULL DEPTH SAW CUT AT THE REPAIR EDGE.
- THE SAW CUTS WHICH EXTEND OUTSIDE THE AREA OF THE REPAIR WILL BE CLEANED AND FILLED WITH A GROUT APPROVED BY THE ENGINEER.
- EXISTING LONGITUDINAL AND TRANSVERSE JOINTS REMOVED DUE TO REPAIR OPERATION SHOULD BE RESTORED IN ACCORDANCE WITH STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."

TABLE NO. 2 DOWELS (SMOOTH BARS)

PAVEMENT THICKNESS (INCHES)	SIZE AND DIA. (INCHES)	LENGTH (INCHES)	SPACING (INCHES)
8	#8 (1 IN.)	18	12
9	#9 (1 1/8 IN.)		
≥10	#10 (1 1/4 IN.)		

TABLE NO. 1 STEEL BARS SIZE AND SPACING

TYPE OF REINFORCEMENTS	TYPE PAVEMENT	TIEBARS		REGULAR REBARS		ALL BARS FIRST & LAST SPACING AT END OR SIDE (INCHES)
		PAVEMENT THICKNESS (INCHES)	BAR SIZE (BAR NO.)	BAR SPACING (INCHES)	BAR SIZE (BAR NO.)	
TRANSVERSE BARS	CRCP (CRCP)	ALL	#6	24	#6	24
	JRCP (JRCP)	ALL	#6	24	NONE	NONE
	JCP (JCP)	ALL	#6	24	NONE	NONE
LONGITUDINAL BARS	CRCP	8	#6	9	#6	9
		9	#6	8	#6	8
		10	#6	7	#6	7
	JRCP	11	#6	6.5	#6	6.5
		≥12	#6	6	#6	6
		ALL	#6	12	#6	24
JCP	ALL	#6	12	NONE	NONE	

Texas Department of Transportation  
Design Division Standard

**FULL DEPTH REPAIR FOR CONCRETE PAVEMENT**

**FDR (CP)-05**

FILE: fdr05.dgn  
DATE: September 1994  
REVISED: 01/03/05

DISCLAIMER: The use of this record is governed by the "Record Engineering Practice Act" and the "Professional Engineers Act". No warranty of any kind is made by the State of Texas or the Board of Engineering Examiners for the accuracy or completeness of the information contained herein. The user of this record is responsible for the accuracy and completeness of the information contained herein and for the results of any action taken thereon.

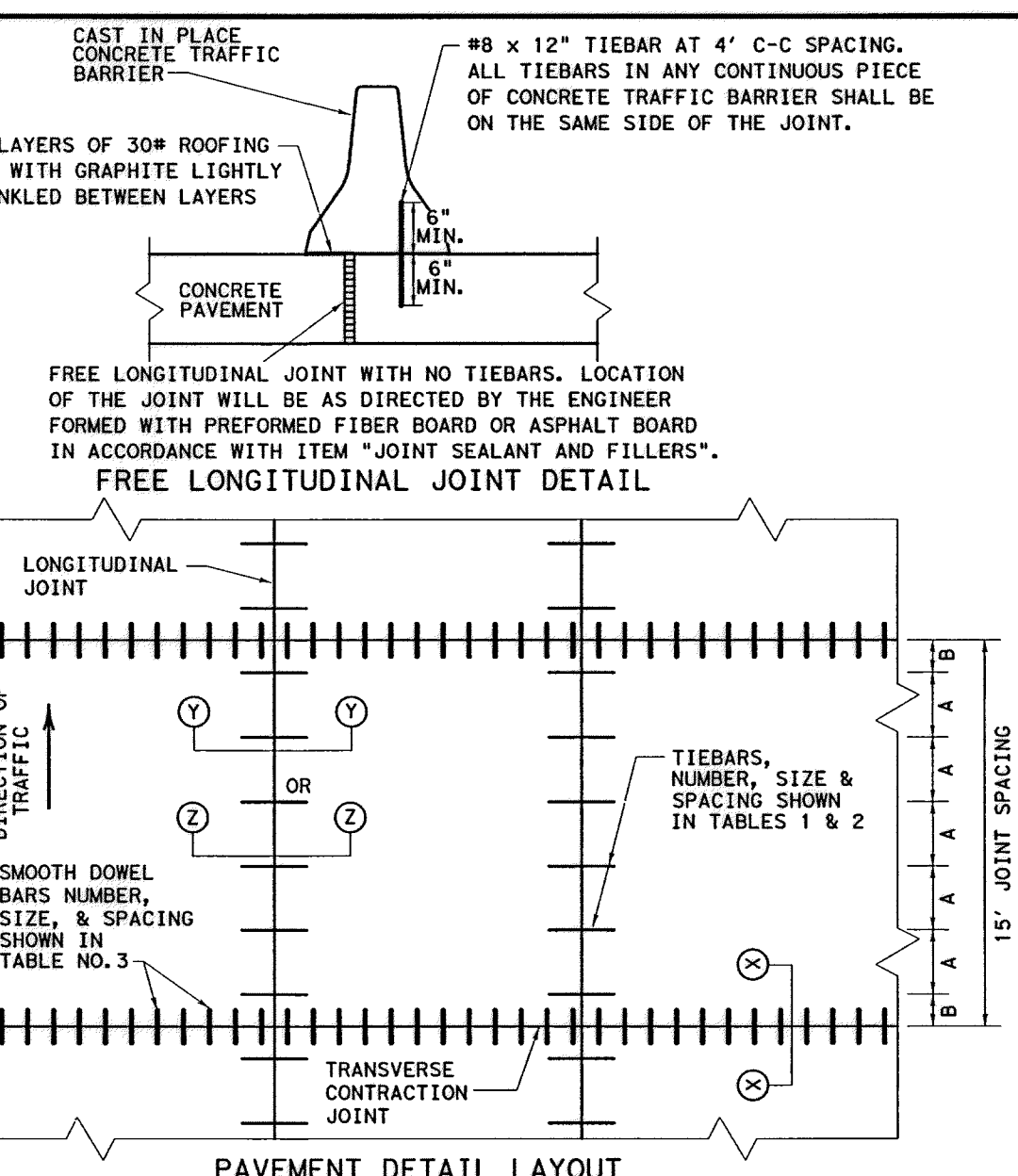


TABLE NO. 1 TIEBARS REQUIRED FOR LONGITUDINAL JOINT JOINTS FOR EACH 15' SLAB

CONCRETE SLAB THICKNESS (INCHES)	DISTANCE FROM THE LONGITUDINAL JOINT TO THE NEAREST LONGITUDINAL FREE EDGE			
	C OR <16'	C OR <24'	C OR <34'	C OR <50'
8	5	5	6	9
10	5	5	7	10
11	5	6	8	12
12	5	6	9	13
13	5	7	9	13
14	6	7	10	NA
15	6	8	11	NA
8	5	5	5	6
9	5	5	5	7
10	5	5	6	8
11	5	5	6	8
12	5	5	6	9
13	5	5	7	10
14	5	5	7	10
15	5	6	8	11

TABLE NO. 2 TIEBAR SPACINGS

REQUIRED NO. OF BARS	REGULAR SPACING (INCHES)	FIRST AT JOINT (INCHES)
5	36	18
6	30	15
7	25	15
8	21	16.5
9	18	18
10	16	18
11	15	18
12	13	18.5
13	12	18

TABLE NO. 3 DOWELS REQUIREMENTS

T, IN.	DOWELS (SMOOTH BARS)	
	SIZE AND LENGTH	AVERAGE SPACING (INCHES)
8	1" x 18"	12
9	1 1/4" x 18"	12
10	1 1/2" x 18"	12
11	1 3/4" x 18"	12
12	1 1/2" x 18"	12
13	1 3/4" x 18"	12
14	1 3/4" x 18"	12
15	1 3/4" x 18"	12

**GENERAL NOTES:**

- CONCRETE SLABS WIDER THAN 100' WITHOUT A FREE JOINT, ARE NOT COVERED BY THIS STANDARD.
- FOR FURTHER INFORMATION REGARDING THE PLACEMENT OF CONCRETE AND LOAD TRANSFER DEVICES REFER TO THE GOVERNING SPECIFICATIONS FOR "CONCRETE PAVEMENT" AND "REINFORCING STEEL."
- DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS, AND CROWN CROSS SLOPE SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
- THE DETAIL FOR THE JOINT SEALANT AND RESERVOIR WILL BE SHOWN IN CONCRETE PAVEMENT DETAIL, "JOINT SEALANT"
- PAVEMENT WIDTHS IN EXCESS OF 16' SHALL BE PROVIDED WITH A LONGITUDINAL JOINT (SECTION Z-Z OR Y-Y). THESE JOINTS SHALL BE LOCATED WITHIN 6" OF THE LANE LINES UNLESS SHOWN ELSEWHERE ON THE PLANS.
- THE JOINT BETWEEN OUTSIDE LANE AND SHOULDER SHALL BE A LONGITUDINAL WARPING JOINT (SECTION Z-Z) UNLESS OTHERWISE SHOWN IN THE PLANS.
- THE SPACING BETWEEN TRANSVERSE JOINTS SHALL BE 15 FEET UNLESS OTHERWISE SHOWN IN THE PLANS.
- WHERE A MONOLITHIC CURB IS SPECIFIED, THE JOINT IN THE CURB SHALL COINCIDE WITH PAVEMENT JOINTS AND MAY BE FORMED BY ANY MEANS APPROVED BY THE ENGINEER.
- TRANSVERSE CONSTRUCTION JOINTS MAY BE FORMED BY USE OF METAL OR WOOD FORMS EQUAL IN DEPTH TO THE NOMINAL DEPTH OF THE PAVEMENT, OR BY METHODS APPROVED BY THE ENGINEER.
- THE ENGINEER WILL ADJUST THE REQUIRED NUMBER OF TIEBARS FOR SLABS SHORTER OR LONGER THAN 15'. SPACING "B" WILL BE ADJUSTED TO MAINTAIN A MINIMUM CLEARANCE OF 2" BETWEEN THE TIEBAR AND THE DOWEL BARS AT THE TRANSVERSE JOINT AND THE "A" SPACING WILL REMAIN AS REQUIRED FOR THE PAVEMENT SLAB WIDTH.
- MULTIPLE PIECE TIEBARS SHALL BE USED AT LONGITUDINAL CONSTRUCTION JOINTS UNLESS OTHERWISE SPECIFIED IN THE PLANS.
- THE SAW CUT FOR LONGITUDINAL WARPING AND THE TRANSVERSE CONSTRUCTION JOINTS MAY BE ONE FOURTH THE SLAB THICKNESS WHEN CRUSHED LIMESTONE IS USED AS THE COARSE AGGREGATE.

Texas Department of Transportation  
Design Division Standard

**CONCRETE PAVEMENT DETAILS**

**CONTRACTION DESIGN**

**T-8 THROUGH 15 INCHES**

**CPCD-94**

FILE: cpcd94.dgn  
DATE: September 1994  
REVISED: 01/03/05

STATE OF TEXAS  
9-15-2014  
MUSHAMMAD M. ALI, P.E.  
98146  
LICENSED PROFESSIONAL ENGINEER

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2814

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

**LUMPKIN ROAD**  
N-T17000-0012-3  
TxDOT STANDARDS

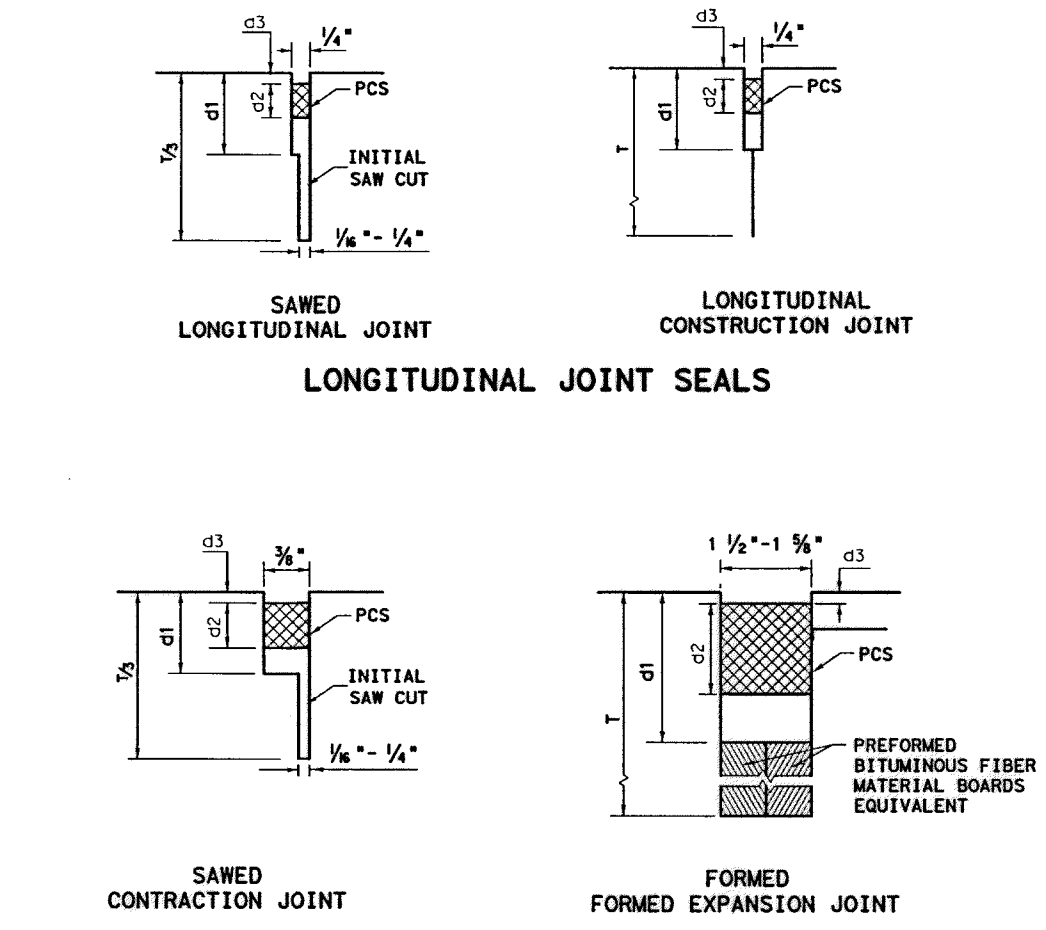
SHEET 4 OF 7  
**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SRG

FILE NO.:  
DRAWING SCALE:  
NOT TO SCALE  
SHEET: 222 OF 226

FACILITY:  
CITY DWG NO.

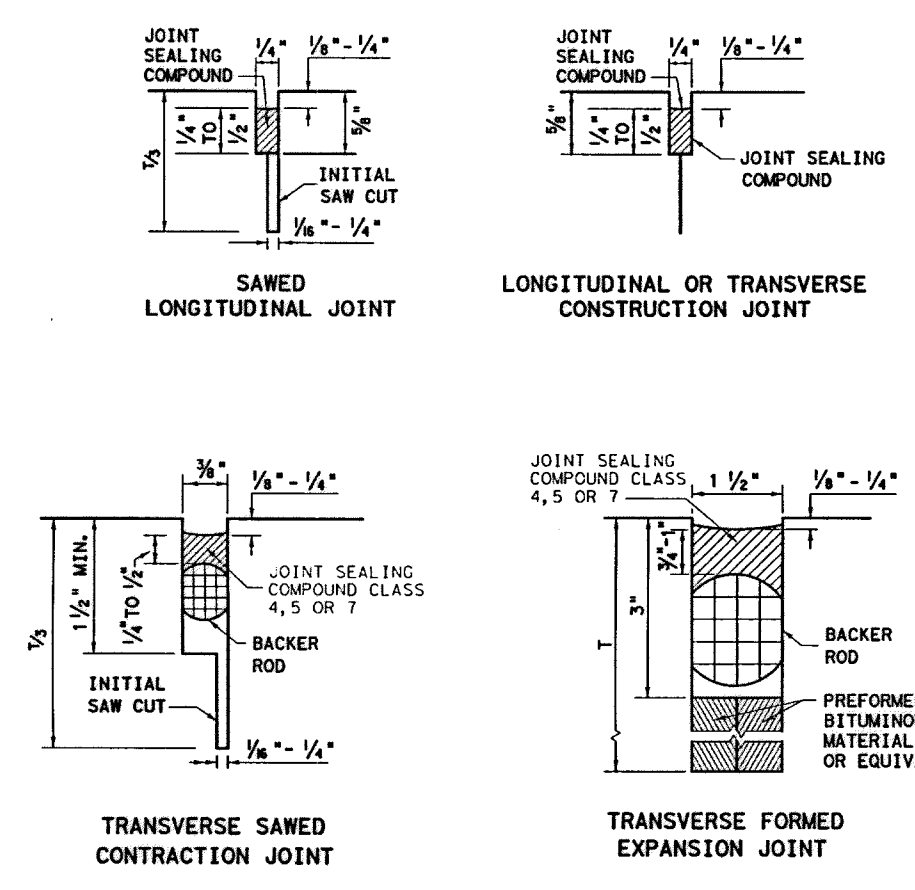
DISCLAIMER: The use of this standard is governed by the "Road Engineering Practice Act", no warranty of any kind is made by the State of Texas for the use of this standard or for the results or consequences resulting from its use.



**METHOD A: PREFORMED COMPRESSION SEALS (PCS)**  
(CLASS 6 PREFORMED JOINT SEALANT)

**GENERAL NOTES FOR METHOD "A"**

- UNLESS OTHERWISE SHOWN IN THE PLANS, EITHER METHOD "A" OR METHOD "B" MAY BE USED.
- THE LOCATION OF JOINTS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
- DIMENSIONS d1, d2, AND d3 SHALL BE IN ACCORDANCE WITH THE PREFORMED COMPRESSION SEAL MANUFACTURER'S RECOMMENDATION.
- THE JOINT RESERVOIR FOR SEALANT SHALL BE SAWS UNLESS OTHERWISE SHOWN ON THE PLANS FOR THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION AND THE TWO SAWS JOINTS.
- THE JOINTS SHALL BE CLEANED IN ACCORDANCE WITH THE ITEM 438 AND PRIOR TO BEGINNING OPERATIONS, THE CONTRACTOR SHALL SUBMIT A STATEMENT FROM THE SEALANT MANUFACTURER SHOWING THE RECOMMENDED EQUIPMENT AND INSTALLATION PROCEDURES TO BE USED.
- THE SAW CUT FOR THE LONGITUDINAL JOINT SHALL BE ONE FOURTH THE SLAB THICKNESS WHEN CRUSHED LIMESTONE IS USED AS THE COARSE AGGREGATE.



**METHOD B: JOINT SEALING COMPOUND**

**GENERAL NOTES FOR METHOD "B"**

- UNLESS OTHERWISE SHOWN IN THE PLANS, EITHER METHOD "A" OR METHOD "B" MAY BE USED.
- THE LOCATION OF JOINTS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
- THE ENGINEER SHALL SELECT A TARGET PLACEMENT THICKNESS FOR THE SEALANT DETAILS WHICH SHOW RANGES IN THICKNESS. THE TARGET THICKNESS WILL NORMALLY BE THE MIDPOINT OF THE RANGE.
- THE JOINT RESERVOIR FOR SEALANT SHALL BE SAWS UNLESS OTHERWISE SHOWN ON THE PLANS FOR THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION AND THE TWO SAWS JOINTS.
- THE JOINTS SHALL BE CLEANED IN ACCORDANCE WITH THE ITEM 438 AND PRIOR TO BEGINNING OPERATIONS, THE CONTRACTOR SHALL SUBMIT A STATEMENT FROM THE SEALANT MANUFACTURER SHOWING THE RECOMMENDED EQUIPMENT AND INSTALLATION PROCEDURES TO BE USED.
- THE SAW CUT FOR THE LONGITUDINAL JOINT SHALL BE ONE FOURTH THE SLAB THICKNESS WHEN CRUSHED LIMESTONE IS USED AS THE COARSE AGGREGATE.

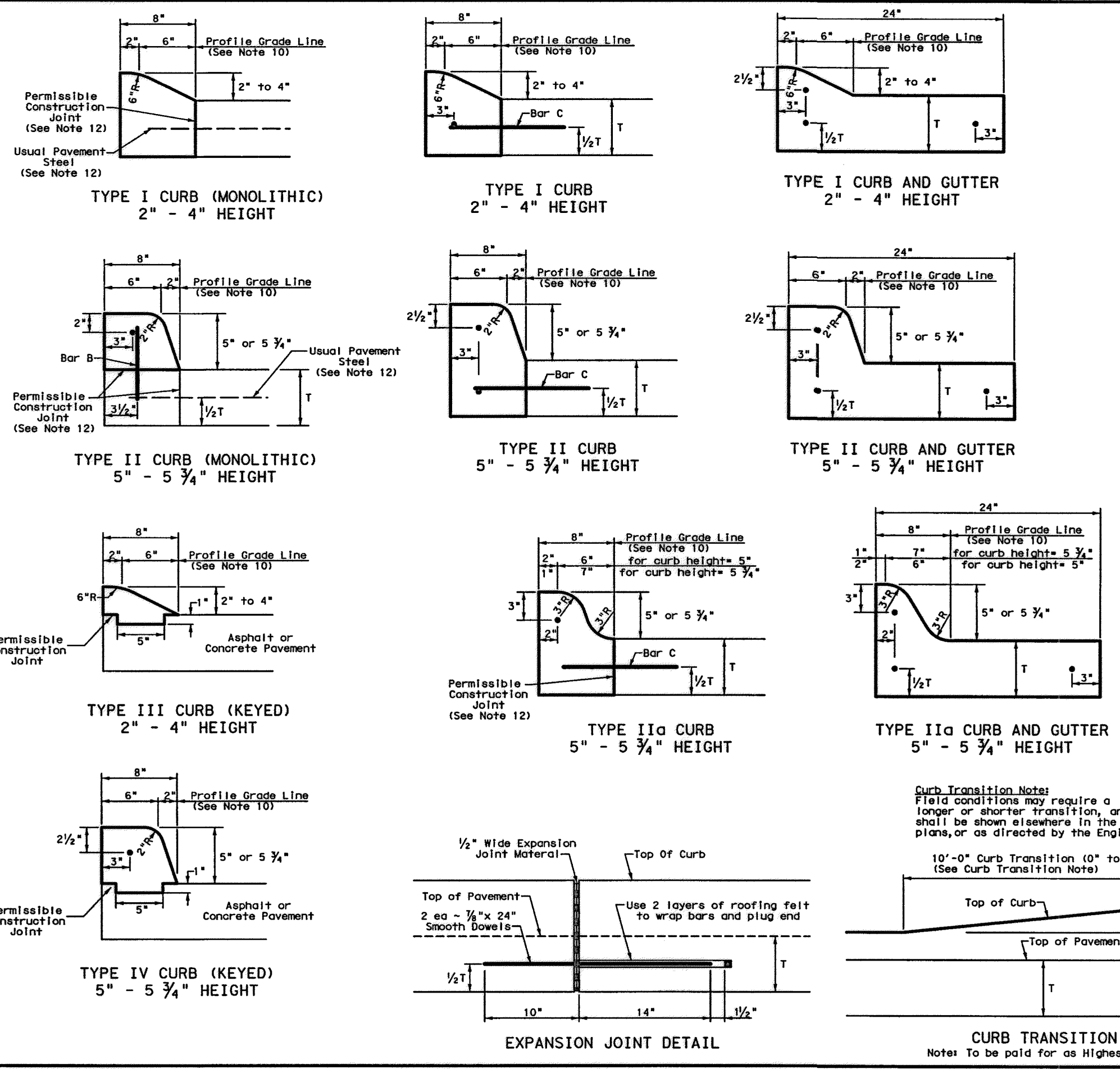
Texas Department of Transportation Design Division Standard

**CONCRETE PAVING DETAILS**  
**JOINT SEALS**

**JS-94**

FILED	10/24/93	BY TxDOT	EX-113	REV-03	EX-113
DATE	September 1994	COM. SECT.	JOB	NO.	REVISION
REV.		DATE	BY	REASON	

DISCLAIMER: The use of this standard is governed by the "Road Engineering Practice Act", no warranty of any kind is made by the State of Texas for the use of this standard or for the results or consequences resulting from its use.



**General Notes**

- All materials and construction shall be in accordance with Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."
- Concrete shall be Class A.
- When reinforcing bars are used, they shall be No. 4 unless otherwise shown. The use of synthetic fiber in lieu of steel reinforcing is acceptable, provided the fiber producer is on the Department Producer List (DPL), maintained by TxDOT, Construction Division.
- Round exposed sharp edges with a rounding tool, to a minimum radius of 1/4 inch.
- All existing curbs and driveways to be removed shall be sawed or removed at existing joints.
- Where concrete curb is placed on existing concrete pavement, the pavement shall be drilled and the reinforcing bars grouted in place.
- Expansion and contraction joints shall be constructed to match pavement joints in all curbs and curb and gutter adjacent to jointed concrete pavement. Where placement of curb or curb and gutter is not adjacent to concrete pavement, expansion joints shall be provided at structures, curb returns at streets, and at locations directed by the Engineer.
- Vertical and horizontal dowel bars and transverse reinforcing bars shall be placed at four feet C-C.
- Dimension 'T' shown is the thickness of concrete pavement. When curb is installed adjacent to flexible pavement dimension 'T' is 8" maximum.
- Usual profile grade line. Refer to typical sections and plan-profile sheets for exact locations.
- One-half inch expansion joint material shall be provided where curb or gutter is adjacent to sidewalk or ramp.
- When vertical permissible construction joints are used, resulting in a longitudinal construction joint in the pavement, the longitudinal pavement steel shall be placed in accordance with pavement details shown elsewhere in the plans for longitudinal construction joints. Reinforcing steel for curb section shall then conform to that required for concrete curb.

Texas Department of Transportation Design Division Standard

**CONCRETE CURB AND GUTTER**  
**CCCCG-12**

FILED	03/22/92	BY TxDOT	EX-113	REV-01	EX-113
DATE	1993	COM. SECT.	JOB	NO.	REVISION
REV.		DATE	BY	REASON	

9.15.2014

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

**MEMORIAL CITY REDEVELOPMENT AUTHORITY**

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

**LUMPKIN ROAD**  
N-T17000-0012-3  
TxDOT STANDARDS

**SHEET 5 OF 7**

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

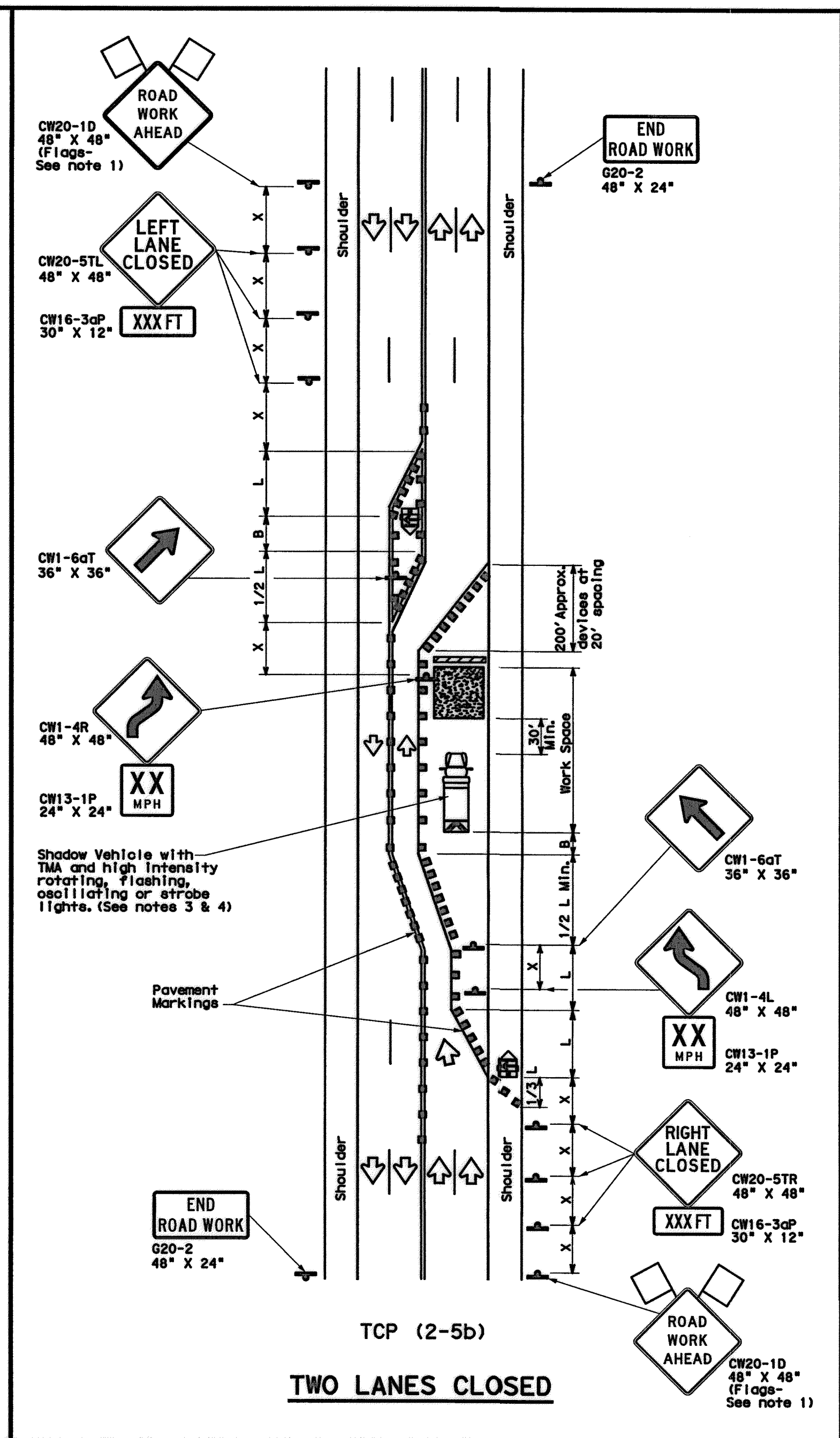
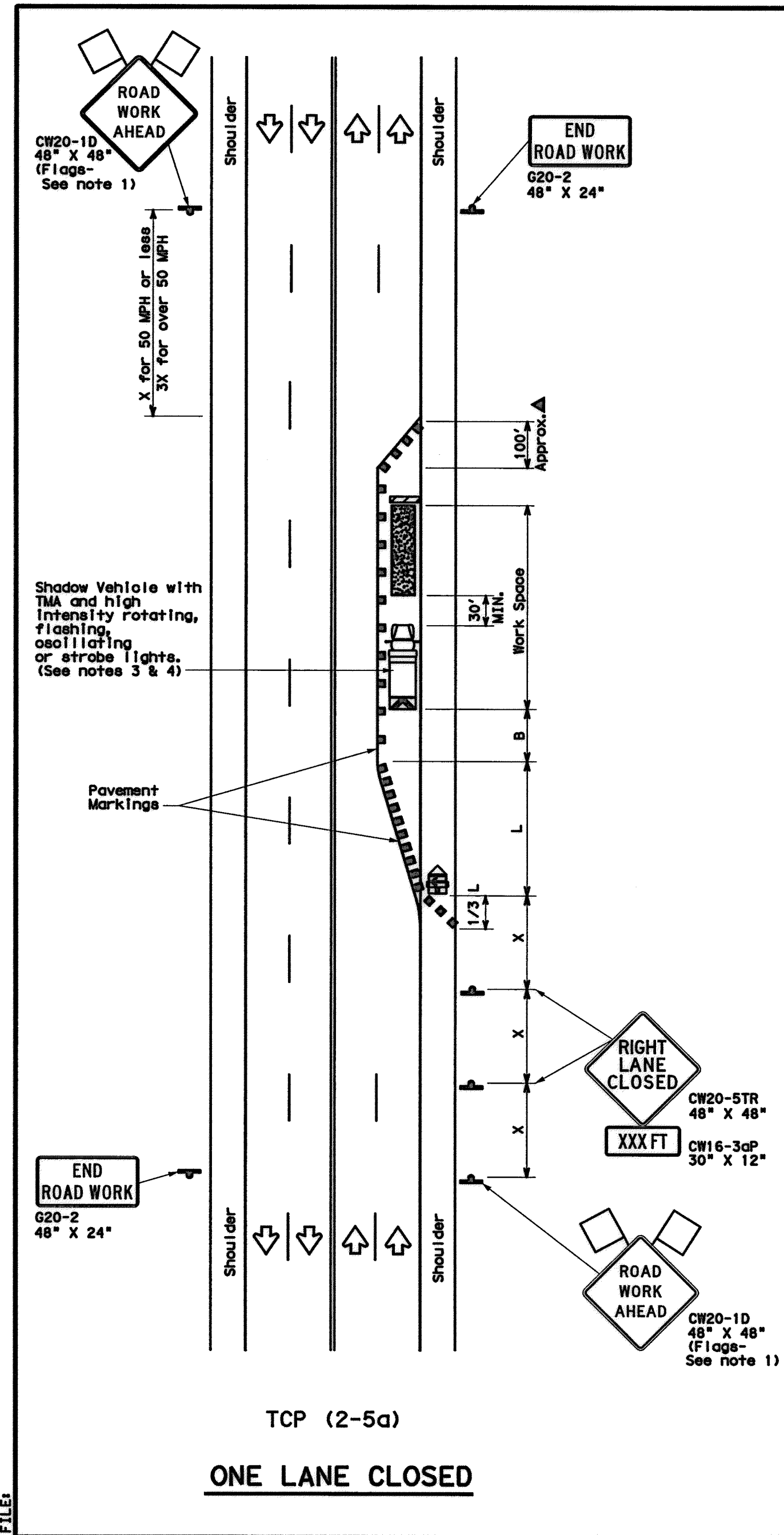
**FILE NO.:** FACILITY

**DRAWING SCALE:** CITY DWG NO.

**NOT TO SCALE**

**SHEET:** 223 OF 226

DISCLAIMER: The use of this standard is governed by the Texas Engineering Practice Act. The accuracy of any sign or device is not guaranteed. The user assumes all liability for any injury, death, or property damage resulting from the use of this standard.



**LEGEND**

	Type 3 Barricade		Channelizing Device
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing **	Suggested Longitudinal Buffer Space **
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L = WS / 60	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60	L = WS	600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

**TYPICAL USAGE**

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
			✓	✓

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
  - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.
  - The downstream taper is optional. When used, it should be 100 feet approximately per lane, with channelizing devices spaced at 20 feet.
- TCP (2-5a)**
- If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" sign shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic, with the arrow board placed in the closed lane near the end of the merging taper.
- TCP (2-5b)**
- Conflicting pavement markings shall be removed for long-term projects.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation  
 Traffic Operations Division

**TRAFFIC CONTROL PLAN  
 LONG TERM LANE CLOSURES  
 MULTILANE CONVENTIONAL RDS.**

**TCP (2-5) -12**

© TXDOT December 1985	DN TXDOT	CKI TXDOT	DN TXDOT	CKI TXDOT
8-95	2-12	REVISIONS	CONT	SECT
1-97				JOB
4-98				HIGHWAY
3-03			DIST	COUNTY
				SHEET NO.

165

STATE OF TEXAS  
 9-15-2014  
 98146  
 MUHAMMAD M. ALI, P.E.  
 LICENSED PROFESSIONAL ENGINEER

Lockwood, Andrews & Newnam, Inc.  
 Firm No. 2614

**MEMORIAL CITY  
 REDEVELOPMENT AUTHORITY**

**LAN Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY

LUMPKIN ROAD  
 N-T17000-0012-3  
 TXDOT STANDARDS

SHEET 6 OF 7  
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO. 1  
 FACILITY  
 CITY DWG NO.

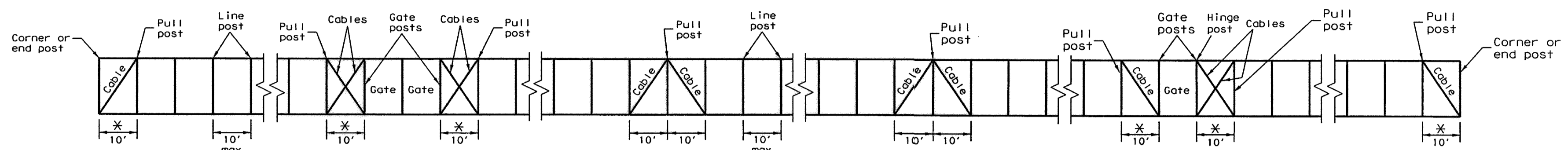
DRAWING SCALE:  
 NOT TO SCALE

SHEET:  
 224 OF 226

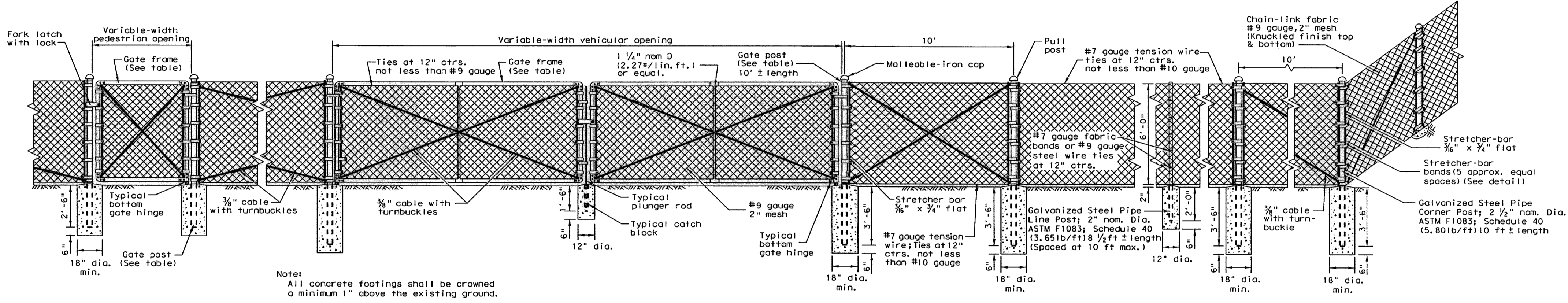


APP.
REVISIONS
No.
DATE

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

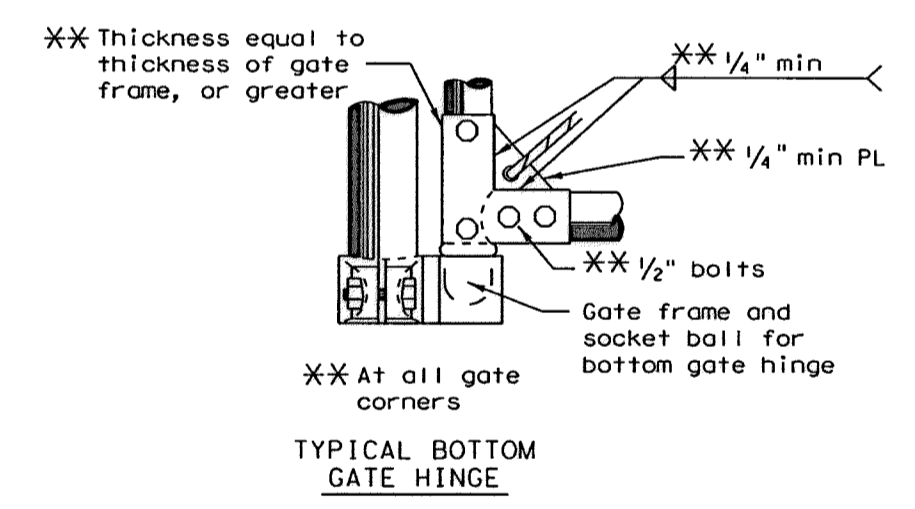


**TYPICAL CABLE AND POST ARRANGEMENT**



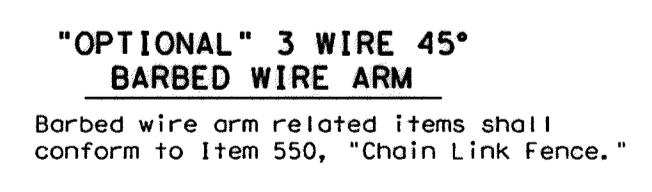
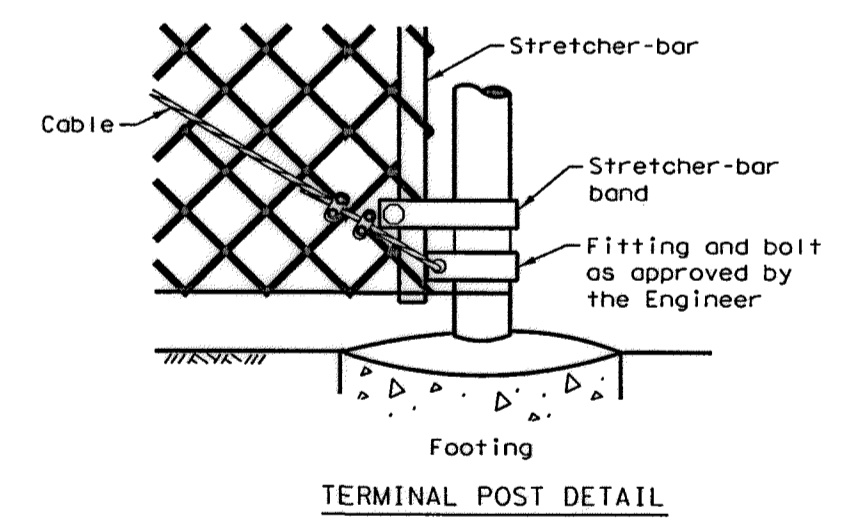
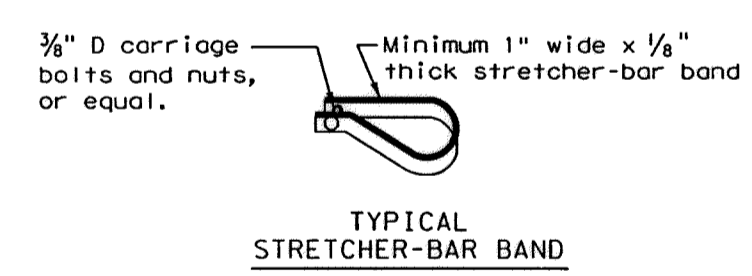
**CHAIN-LINK BARRIER FENCE (6 FT.)**

Foundation designs shown are "minimums" for a 6 ft. fence. Taller fences may require larger foundation designs.



GATE (TYPES AND SIZES)	
Single Inclusive	Double Inclusive
Up to 6'	Up to 12'
Over 6' to 12'	Over 12' to 26'
Over 12' to 18'	Over 26' to 36'
Over 18'	Over 36'

GATE FRAME (WEIGHT)		GATE POST (WEIGHT)	
SIZE	WT./LIN. FT.	SIZE	WT./LIN. FT.
1 1/2" nom dia. or equal	2.72 Lbs.	2 1/2" nom dia. or equal	5.79 Lbs.
		3 1/2" nom dia. or equal	9.11 Lbs.
		6" nom dia.	18.97 Lbs.
		8" nom dia.	24.70 Lbs.



**FABRIC & TENSION WIRE DETAIL, TOP & BOTTOM**

**GENERAL NOTES**

- Items hereon shall conform to Item 550, "Chain Link Fence."
- Typical installation plan may vary as shown elsewhere on the plans or as directed by the Engineer. Location of gates shown elsewhere on plans.
- Gate-frame members shall be bolted, at frame corners, to joint fittings with four 1/2" bolts per joint.
- All cable connections are to be made with two 3/8" cable clamps.
- All pull posts and end posts and their foundations shall have the same respective dimensions as those shown for corner post.
- All pull post shall be furnished with two stretcher bars.
- One end of each turnbuckle may be attached directly to fittings with a clevis.
- Concrete footings are to be crowned at the top to shed water.

Texas Department of Transportation		Design Division Standard	
<b>CHAIN LINK FENCE</b>			
<b>CLF-10</b>			
FILE: clf10.dgn	DW: TxDOT	CHK: AM	DW: BD
© TxDOT 1996	CONT: SECT	JOB:	HIGHWAY:
REVISIONS:	DIST:	COUNTY:	SHEET NO.:

MEMORIAL CITY REDEVELOPMENT AUTHORITY

**Lockwood, Andrews & Newnam, Inc.**  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3  
TxDOT STANDARDS

SHEET 7 OF 7

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

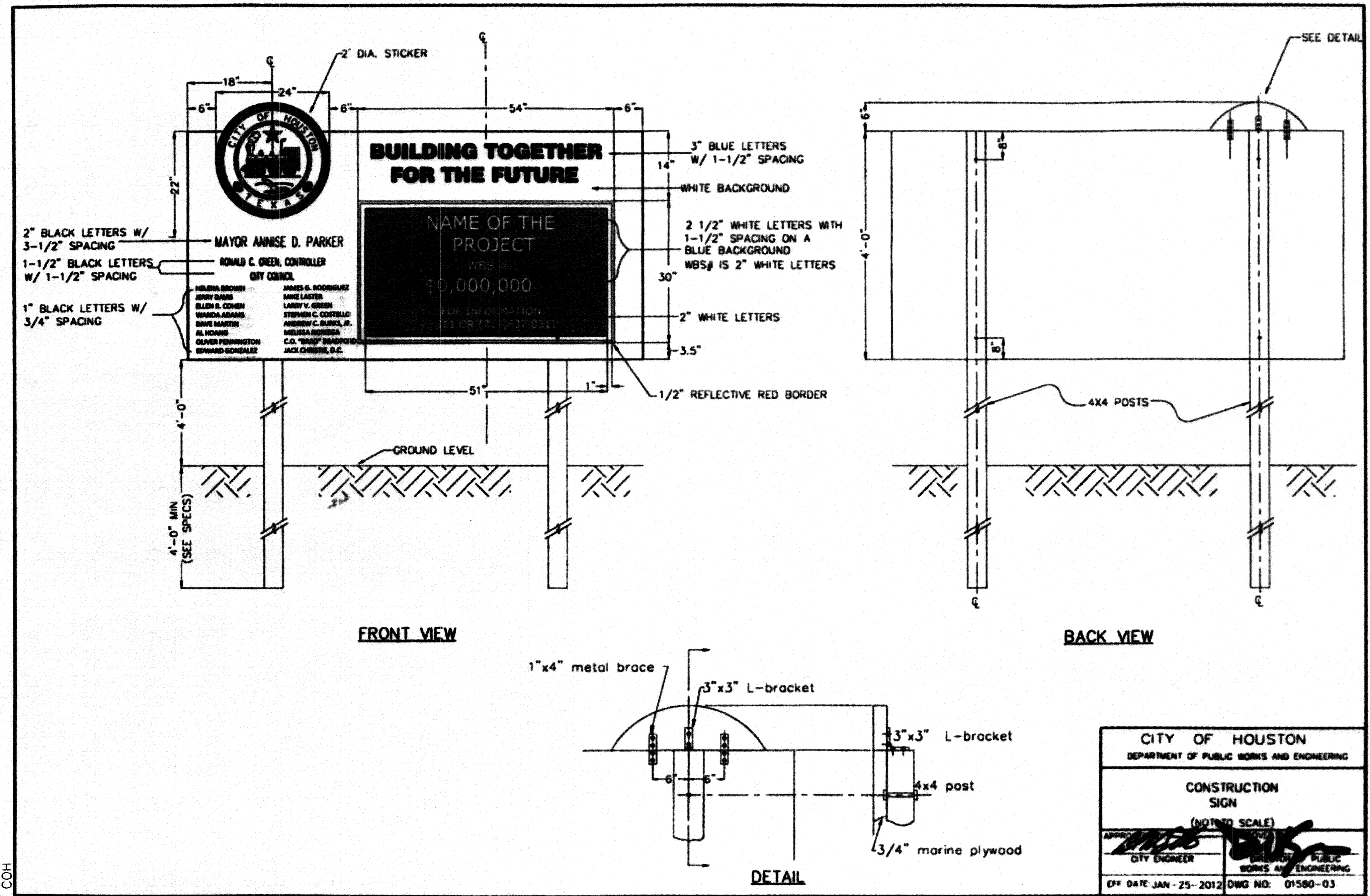
WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SRQ

FILE NO.:

DRAWING SCALE:

NOT TO SCALE

SHEET: 225 OF 226



CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

**CONSTRUCTION SIGN**  
(NOT TO SCALE)

APPROVED: [Signature] CITY ENGINEER

APPROVED: [Signature] DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JAN - 25 - 2012 DWG NO: 01580-03

STATE OF TEXAS  
MUSHAMMAD M. ALI, P.E.  
98146  
LICENSED PROFESSIONAL ENGINEER  
10-21-2014

Lockwood, Andrews & Newnam, Inc.  
Firm No. 2614

MEMORIAL CITY REDEVELOPMENT AUTHORITY

**LAN** Lockwood, Andrews & Newnam, Inc.  
A LEO A DALY COMPANY

LUMPKIN ROAD  
N-T17000-0012-3

**CONSTRUCTION SIGN**

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	WASTEWATER	TRAFFIC
ST. & BRIDGE	STORMWATER	SWQ

FILE NO. : FACILITY

DRAWING SCALE: CITY DWG NO.

VERT: 1"=2'  
HORZ: 1"=20'

SHEET: 226 OF 226

COH

p:\1\edpw. laddco. lnts\projecwise\Documents\Projects\130-1-10384-001\4-0-Production\4-01-Drawings\Roadway\Standard Detail\PROJECT SIGN.dwg/20/2014 11:16:06 AM MJCuchr1e